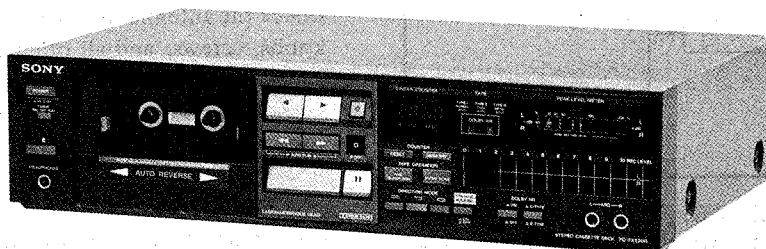


TC-FX520R

SERVICE MANUAL

US Model
AEP Model



'Dolby' and the double-D symbol are the trade marks of Dolby Laboratories Licensing Corporation. Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.

SPECIFICATIONS

Tape Transport Mechanism Type	TCM-150R1
-------------------------------	-----------

Recording system

4-track 2-channel stereo

Fast-forward and rewind time

Approx. 90 sec. (with C-60 cassette)

Bias frequency

105 kHz

Signal-to-noise ratio (NAB, at peak level)

Cassette	DOLBY NR switches	OFF	B-TYPE ON	C-TYPE ON
TYPE IV (Sony METAL-ES)		58 dB	65 dB	71 dB
TYPE II (Sony UCX)		57 dB	64 dB	70 dB
TYPE I (Sony BHF or HF-S)		54 dB	61 dB	67 dB

Total harmonic distortion

1.0% (with Sony METAL-ES cassettes)

Frequency response

DOLBY NR OFF

- With TYPE IV cassette (Sony METAL-ES)
20 - 18,000 Hz
30 - 17,000 Hz (± 3 dB)
30 - 13,000 Hz (± 3 dB, 0 VU recording)
- With TYPE II cassette (Sony UCX)
20 - 18,000 Hz
30 - 17,000 Hz (± 3 dB)
- With TYPE I cassette (Sony BHF or HF-S)
20 - 16,000 Hz

Wow and flutter Inputs

0.045% WRMS (NAB)

Microphone inputs (phone jacks)

Sensitivity 0.25 mV (-70 dB)

For a low-impedance microphone

Line inputs (phono jacks)

Sensitivity 77.5 mV (-20 dB)

Input impedance 47 k ohms

Outputs

Line outputs (phono jacks)

Output level 0.44 V (-5 dB) at load

impedance 47 k ohms

Load impedance over 10 k ohms

Headphone output (stereo phone jack)

Output level -28 dB at a load impedance of 8 ohms

General

Power requirements

US Model:

120 V ac, 60 Hz

AEP, G-AEP Model:

220 V ac, 50/60 Hz

(240 V ac adjustable by authorized

Sony personnel)

Power consumption

24 watts

Dimensions


Approx. 430 \times 105 \times 275 mm (w/h/d)
(17 \times 4 $\frac{1}{4}$ \times 10 $\frac{7}{8}$ inches)

Weight

including projecting parts and controls
Approx. 4.7 kg (10 lbs 6 oz)

0 dB = 0.775 V

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.



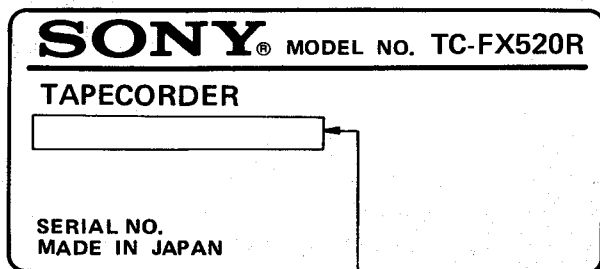
STEREO CASSETTE DECK
SONY®

TC

TC-FX520R

MODEL IDENTIFICATION

— Specification Label —



US model: AC: 120 V 60 Hz 24 W
AEP, G-AEP model: AC: 220 V ~ 50/60 Hz 24 W

SAFETY CHECK-OUT (US Model)

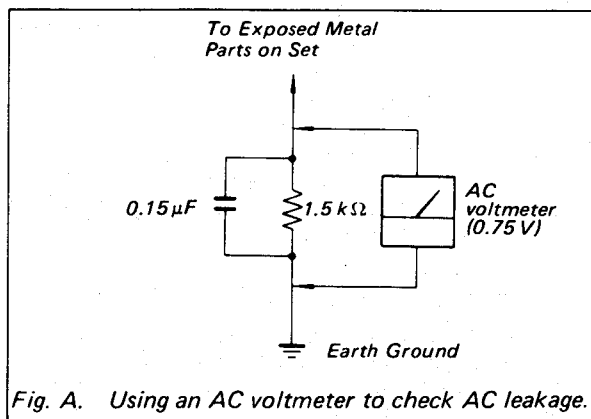
After correcting the original service problem, perform the following safety check before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

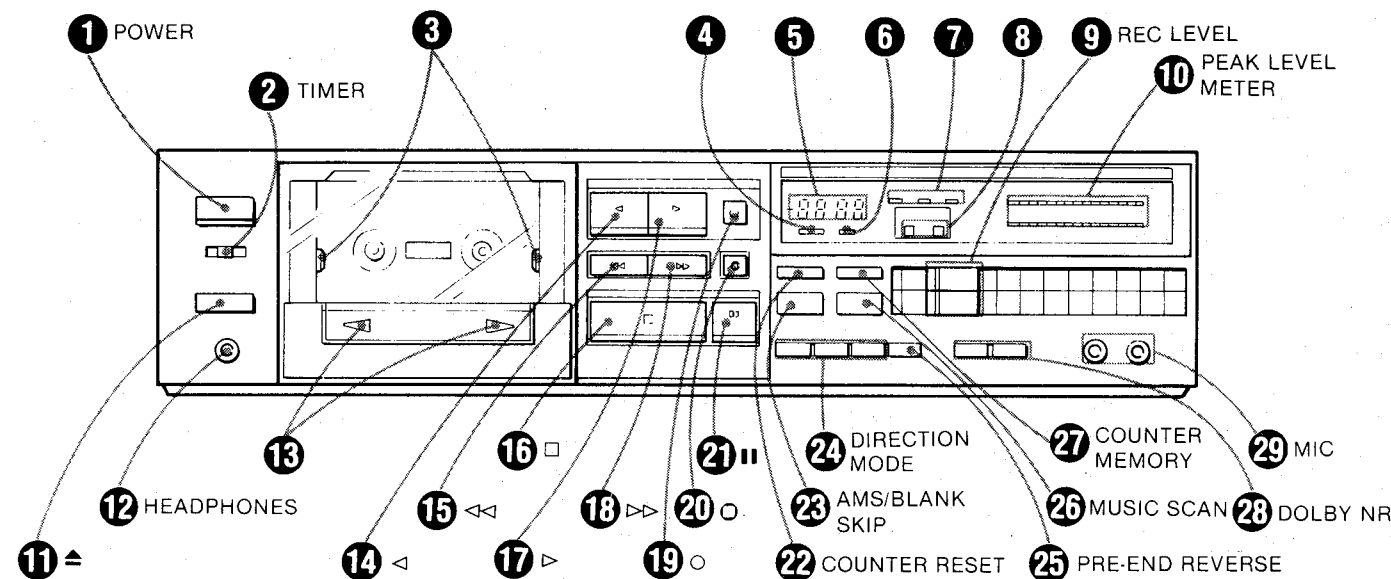
The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

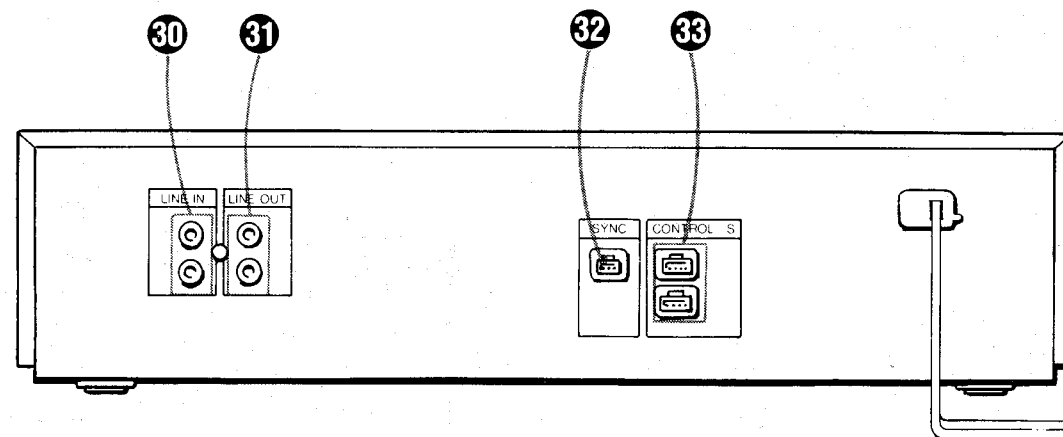


FUNCTION OF CONTROLS

Front panel



Rear panel



1 POWER switch

2 TIMER switch

3 Cassette stabilizer

4 MEMORY indicator

5 Digital linear counter

6 PER (pre-end reverse) indicator

When the PRE-END REVERSE button is depressed (ON), this indicator lights to show the pre-end reverse function is engaged.

7 TAPE indicators

When a cassette is inserted, the appropriate TAPE indicator lights and the optimum recording and playback settings of the tape are set by the automatic tape select system.

8 DOLBY NR indicators

The selected Dolby NR B or C type indicator lights.

9 REC LEVEL (recording level) controls

10 PEAK LEVEL METERS

11 EJECT button

12 HEADPHONES jack (stereo phone jack)

13 Direction indicators

FWD > (forward) indicator: Lights to show that the front side of the cassette is being played back or recorded on.

REV < (reverse) indicator: Lights to show that the reverse side of the cassette is being played back or recorded on.

14 < (reverse play) button

15 << (fast-reverse) button

16 □ (stop) button

17 > (forward) button

18 >> (fast-forward) button

19 ○ (record) button

20 ○ (record muting) button

21 || button

22 COUNTER RESET button

Press to reset the tape counter to 0.00.

23 AMS/BLANK SKIP button and indicator

To activate the AMS and blank skip functions, press this button. The indicator of the button lights. To cancel these functions, press it again. The indicator goes off.

24 DIRECTION MODE buttons

Depress one of the buttons to select the mode of tape movement for recording and playback.

⇒ (one-direction) button: To record or play back one side of the cassette.

↻ (one-cycle) button: To record or play back both sides of the cassette. If this button is pressed when the reverse side of the cassette is being recorded or played back, the tape will stop at the end of that side.

⦿ (five-cycle) button: To play back both sides of the cassette five times. If this button is pressed when the reverse side of the cassette is being recorded or played back, the tape will stop at the end of the 5th playback of the reverse side so that the front side will have been played back only four times. The recording will stop at the end of the reverse side.

25 PRE-END REVERSE button

Depress this button (ON) to automatically reverse the direction of the tape during recording or playback when the tape approaches the end. To cancel the pre-end reverse function, press the button again to release (OFF). The tape reverses the direction at the very end. The pre-end reverse function operates only in the direction from the front side to the reverse side.

26 MUSIC SCAN button

To activate the music scan function, press this button. The indicator of the button lights. To cancel this function, press it again or press the AMS/BLANK SKIP button. The indicator goes off.

27 COUNTER MEMORY button

Used for the memory stop/play. When this button is pressed, the MEMORY indicator lights on the display.

28 DOLBY NR* switches

To record or play back using the Dolby NR (Noise Reduction) system, depress the left ON/OFF switch (ON), then select either the B-type or C-type Dolby NR system with the right switch.

Depress the switch for the C-type system (C-TYPE), or press to release it for the B-type system (B-TYPE). To record or play back without the Dolby NR process, press to release the ON/OFF switch (OFF). For details about the Dolby NR system.

29 MIC jacks (phone jack)

Any low-impedance microphone equipped with a phone plug may be used.

30 LINE IN (line input) jacks (phono jack)

Accepts tape outputs from an amplifier for tape recording and line outputs from another tape deck when duplicating a tape from that unit.

31 LINE OUT (line output) jacks (phono jack)

Accepts tape inputs from an amplifier for playing back a tape and line inputs from another tape deck for duplicating a tape onto that unit.

32 SYNC connector (3-pin)

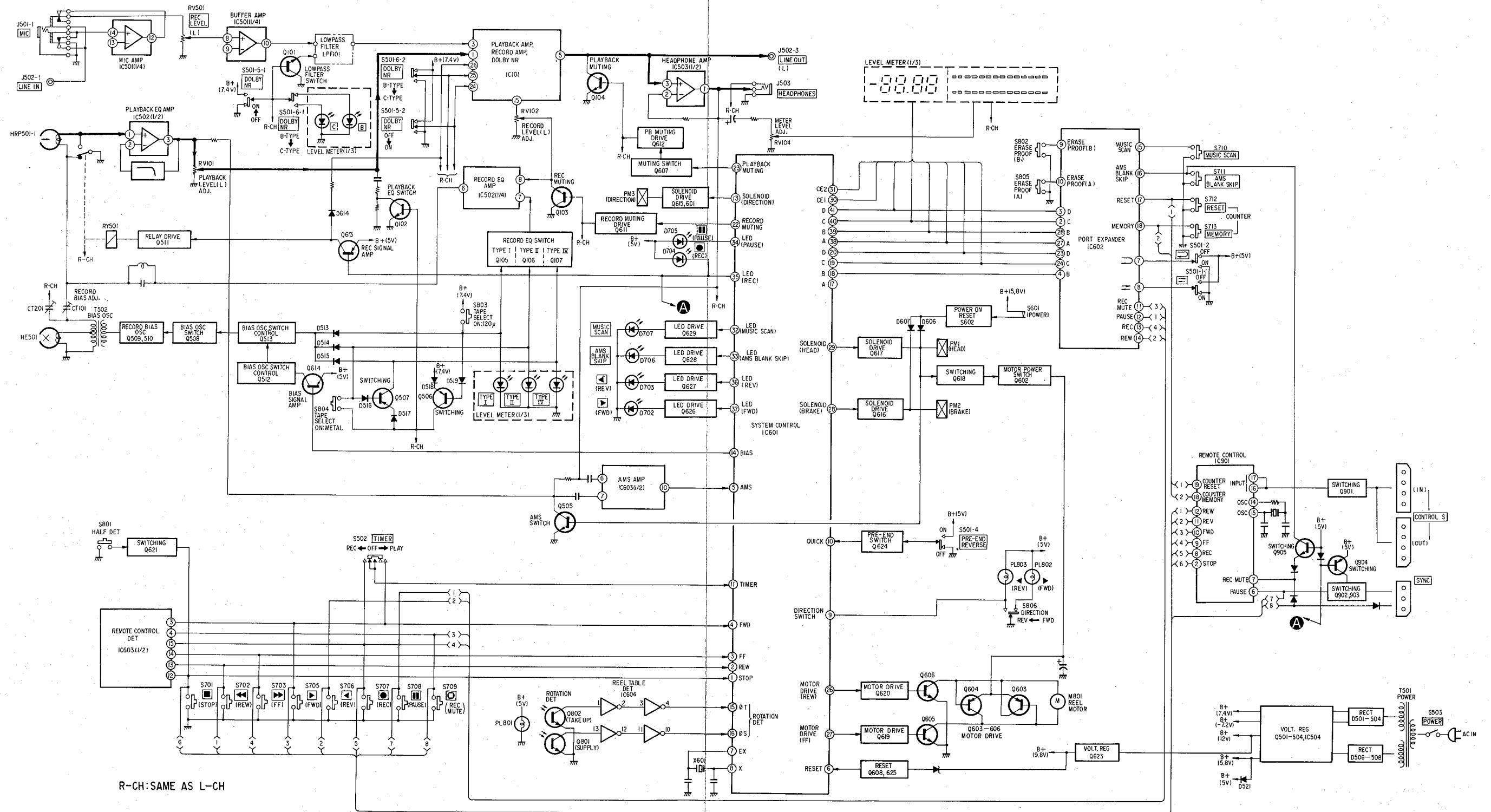
For synchro recording, connect to the SYNC connector of the turntable system. For further details, refer to the instruction manual of the Sony turntable system.

33 CONTROL S connectors (4-pin)

OUT: Connect to the CONTROL S IN or REMOTE IN connector of other Sony audio equipment with the supplied flat 4-pin remote control cord for remote control of the total audio system.

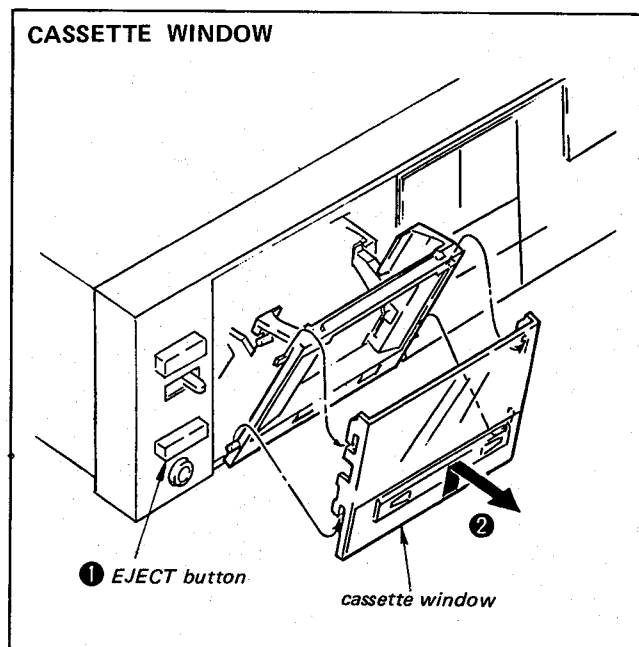
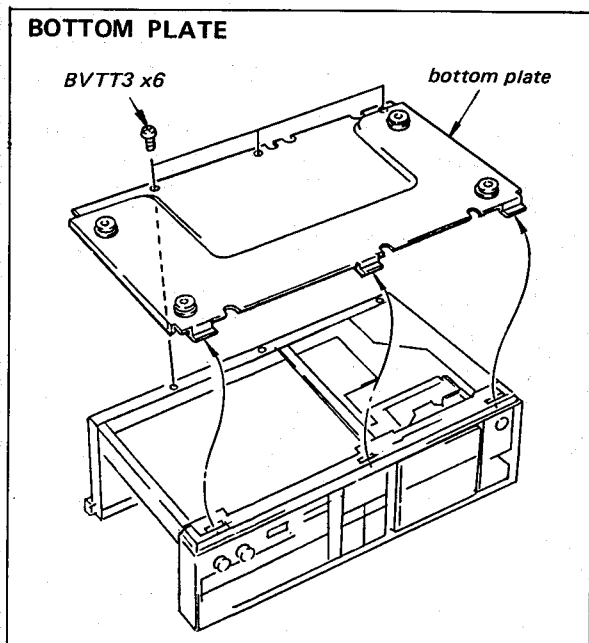
IN: Connect to the CONTROL S OUT or REMOTE OUT connector of an optional Sony system control tuner or receiver for remote control of the total audio system.

SECTION 1 BLOCK DIAGRAM



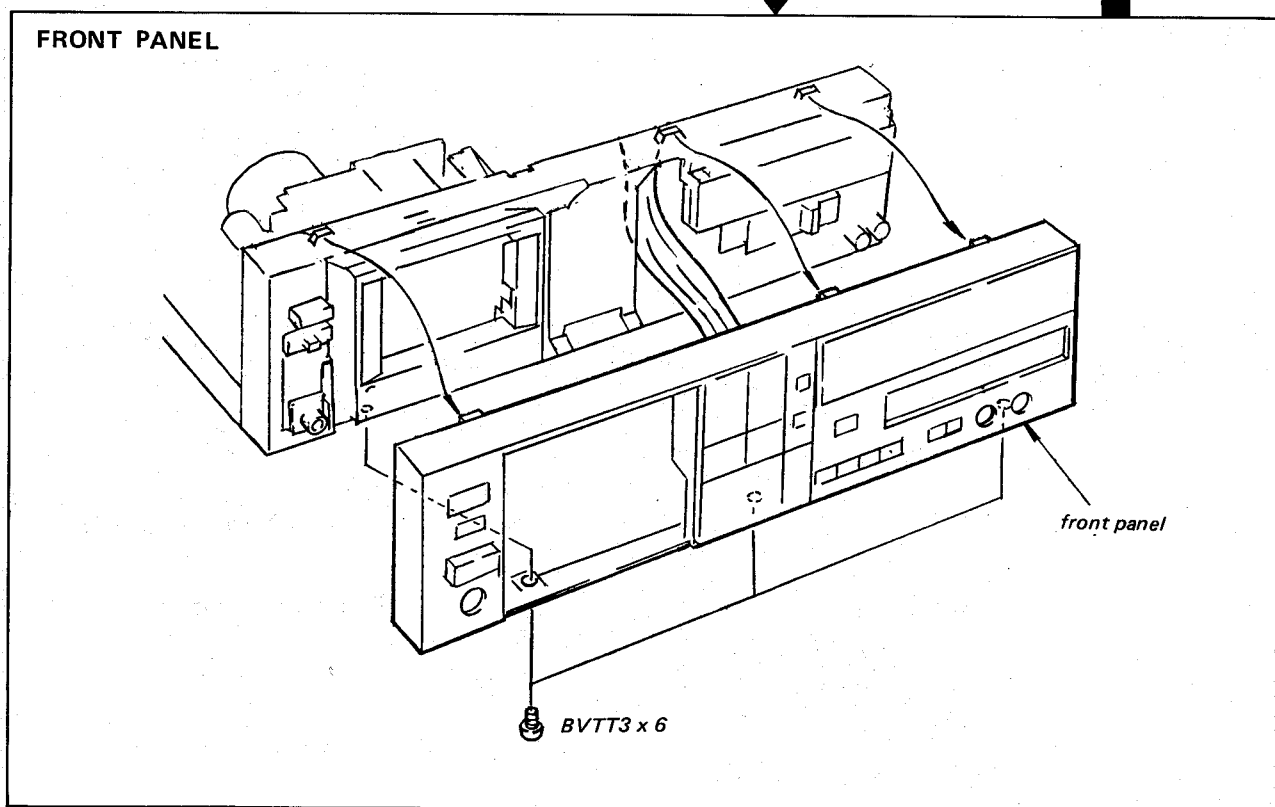
SECTION 2 DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

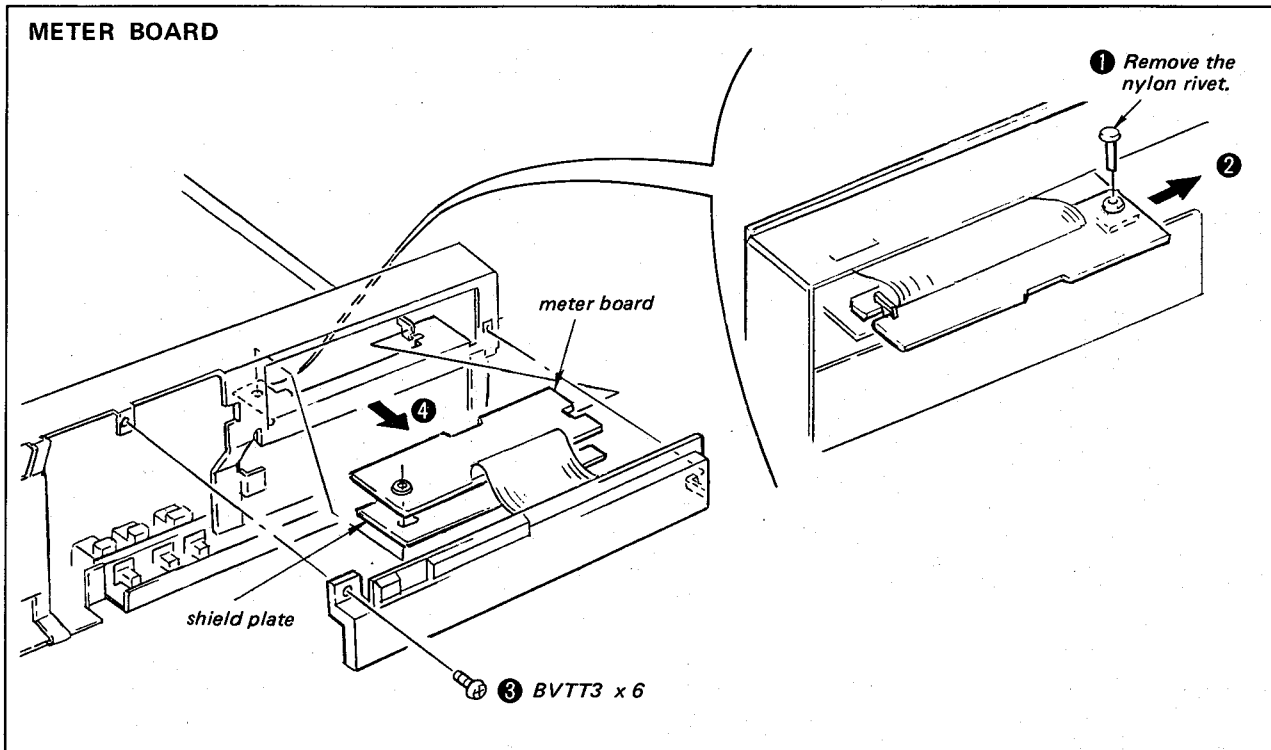


CASE REMOVAL

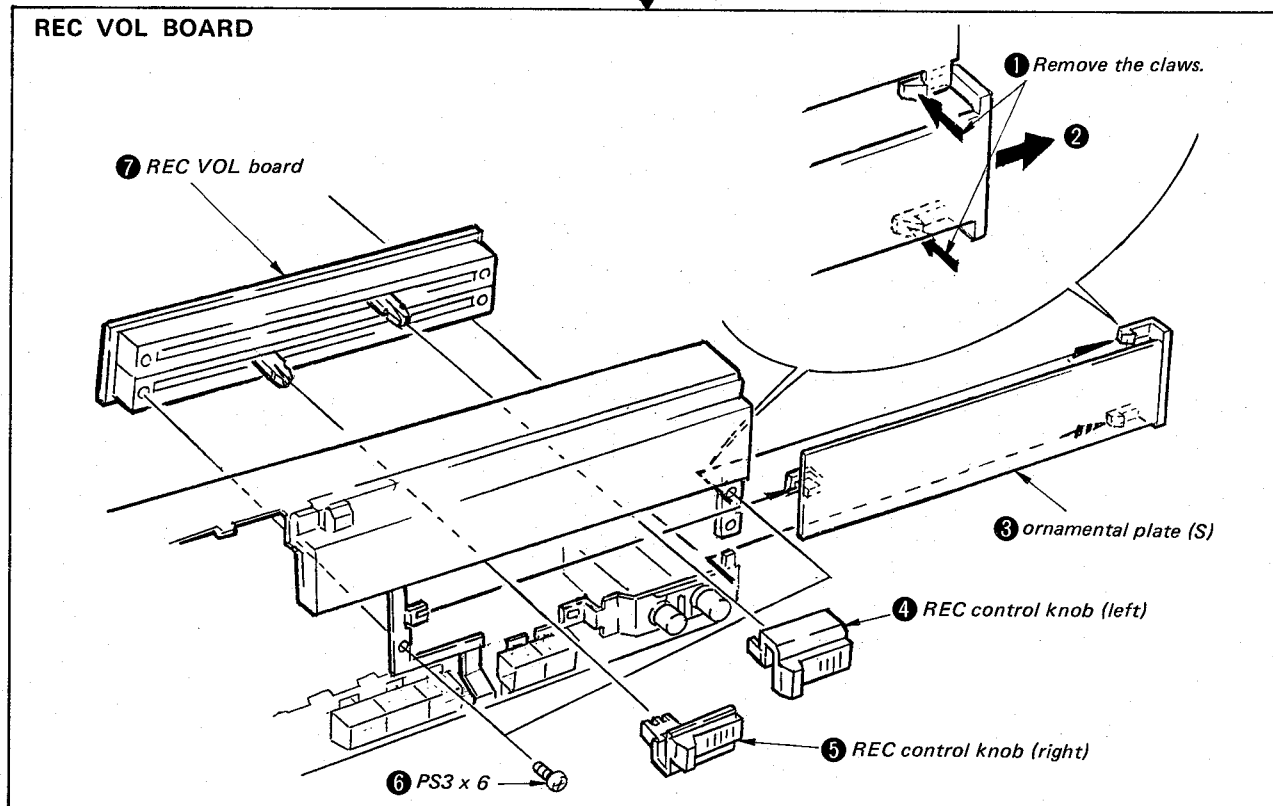
Remove case by taking out four screws securing case.



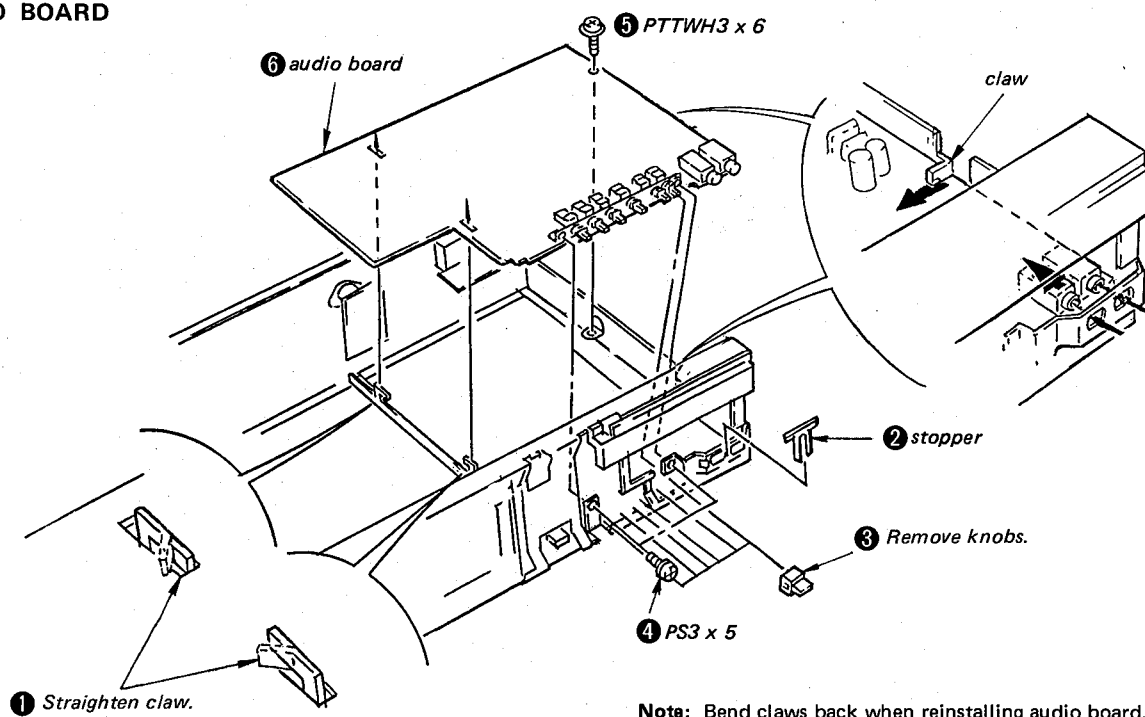
METER BOARD



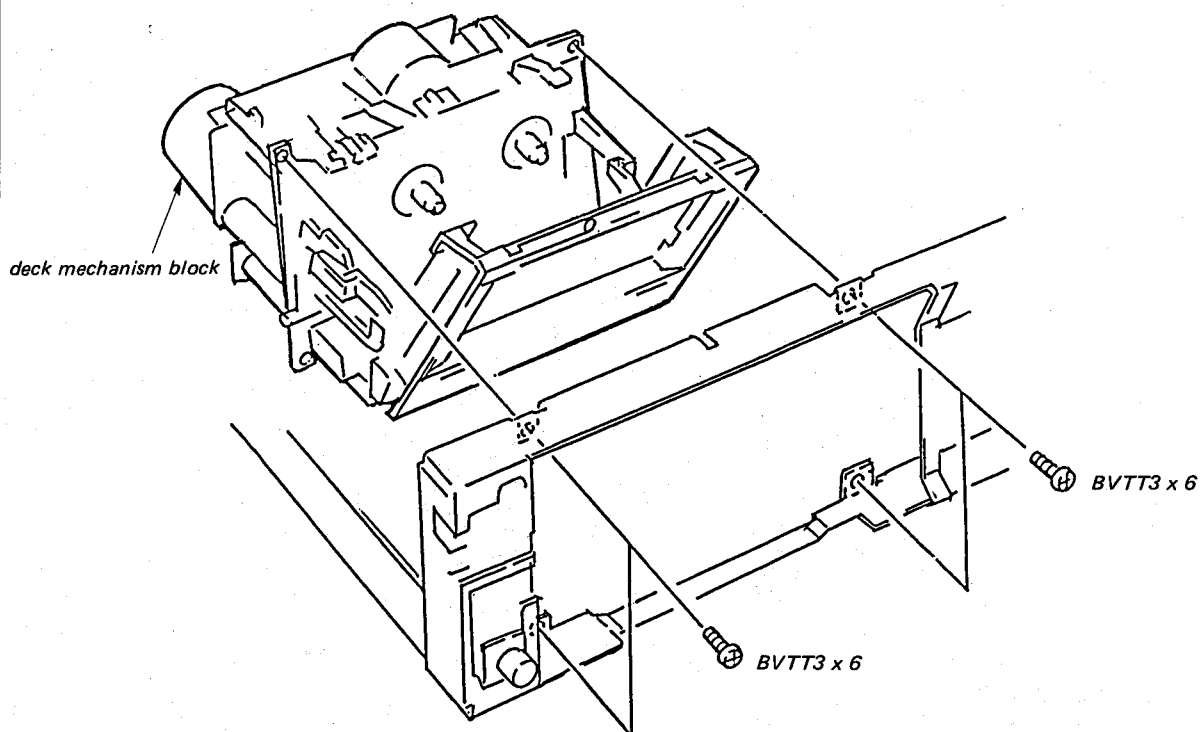
REC VOL BOARD



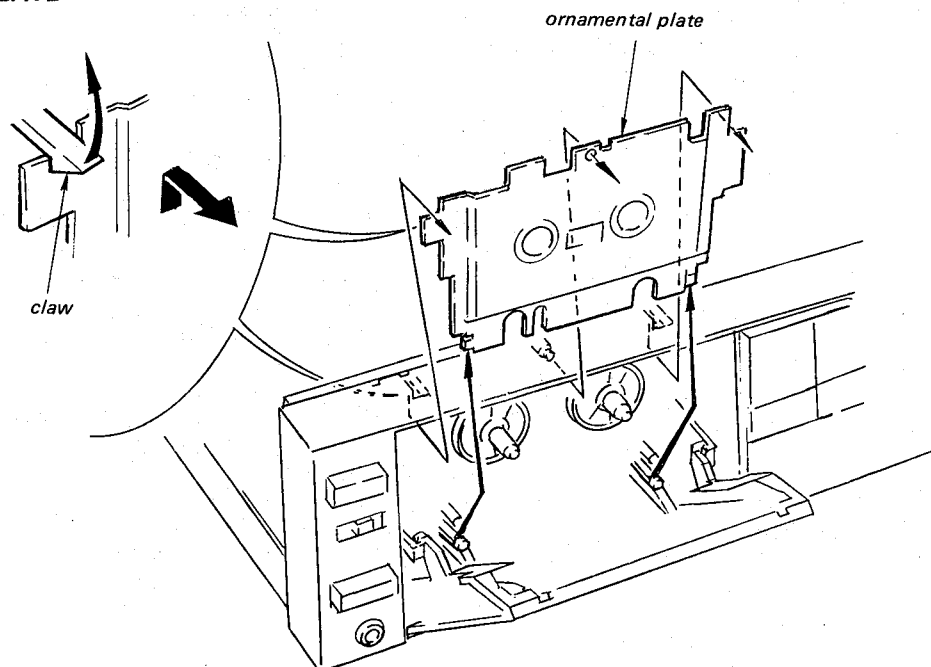
AUDIO BOARD



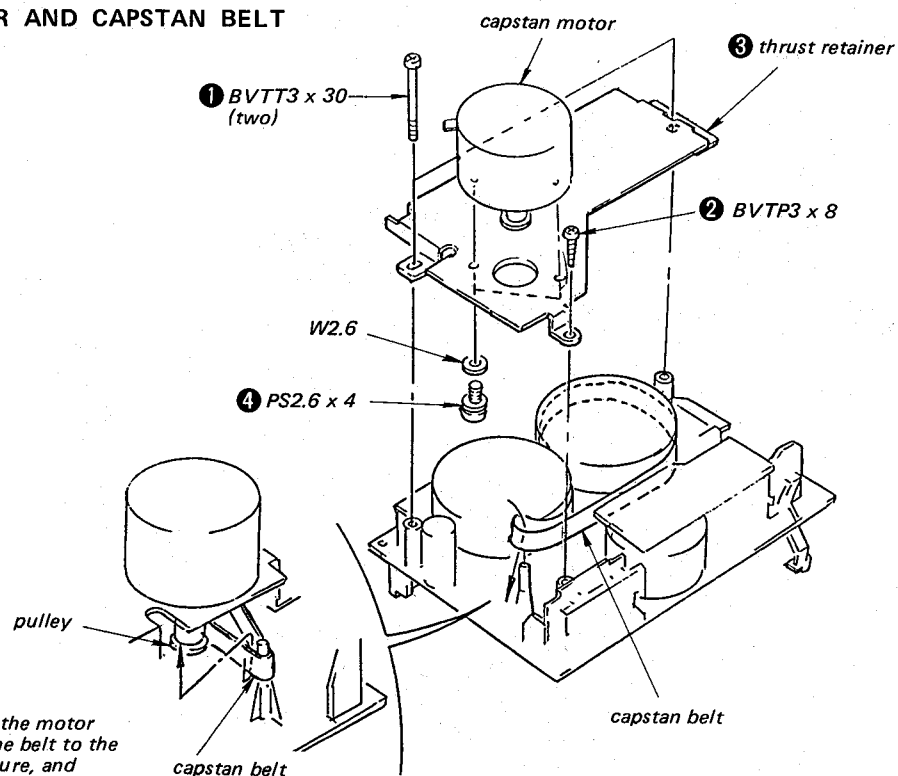
DECK MECHANISM BLOCK



ORNAMENTAL PLATE

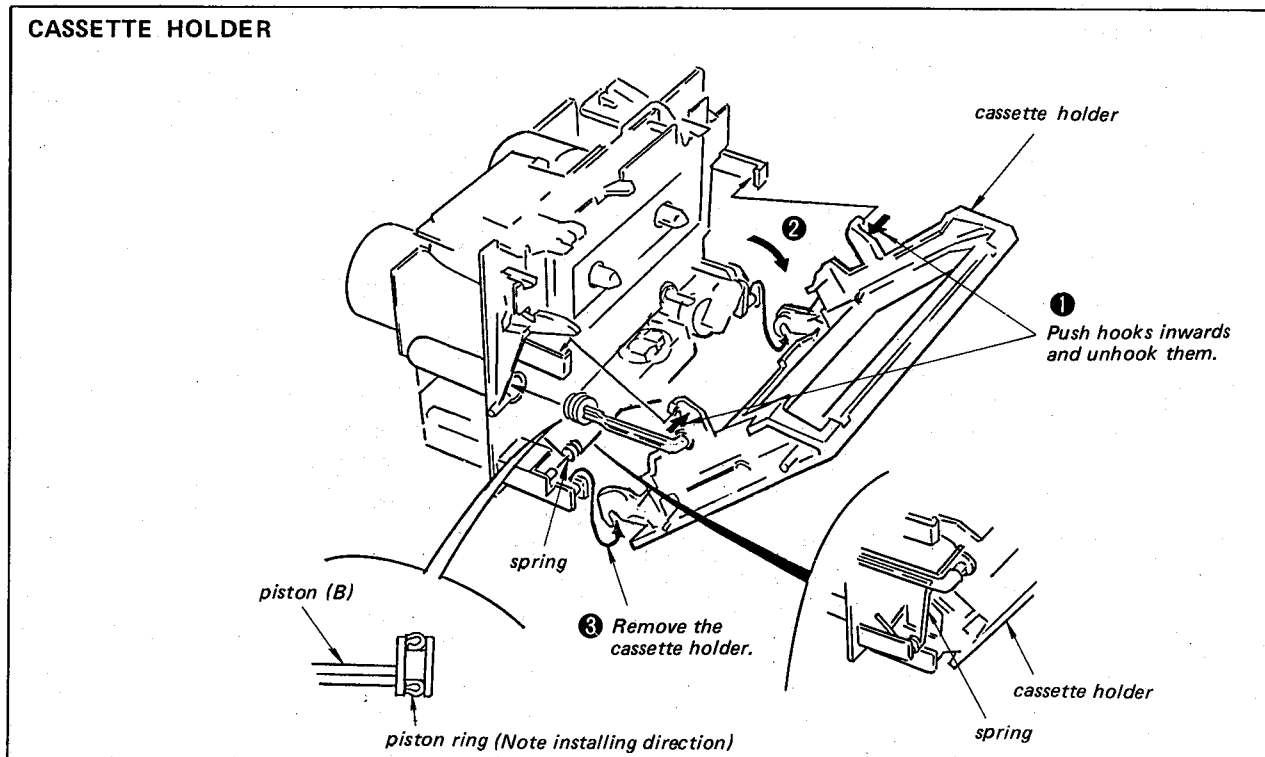


CAPSTAN MOTOR AND CAPSTAN BELT

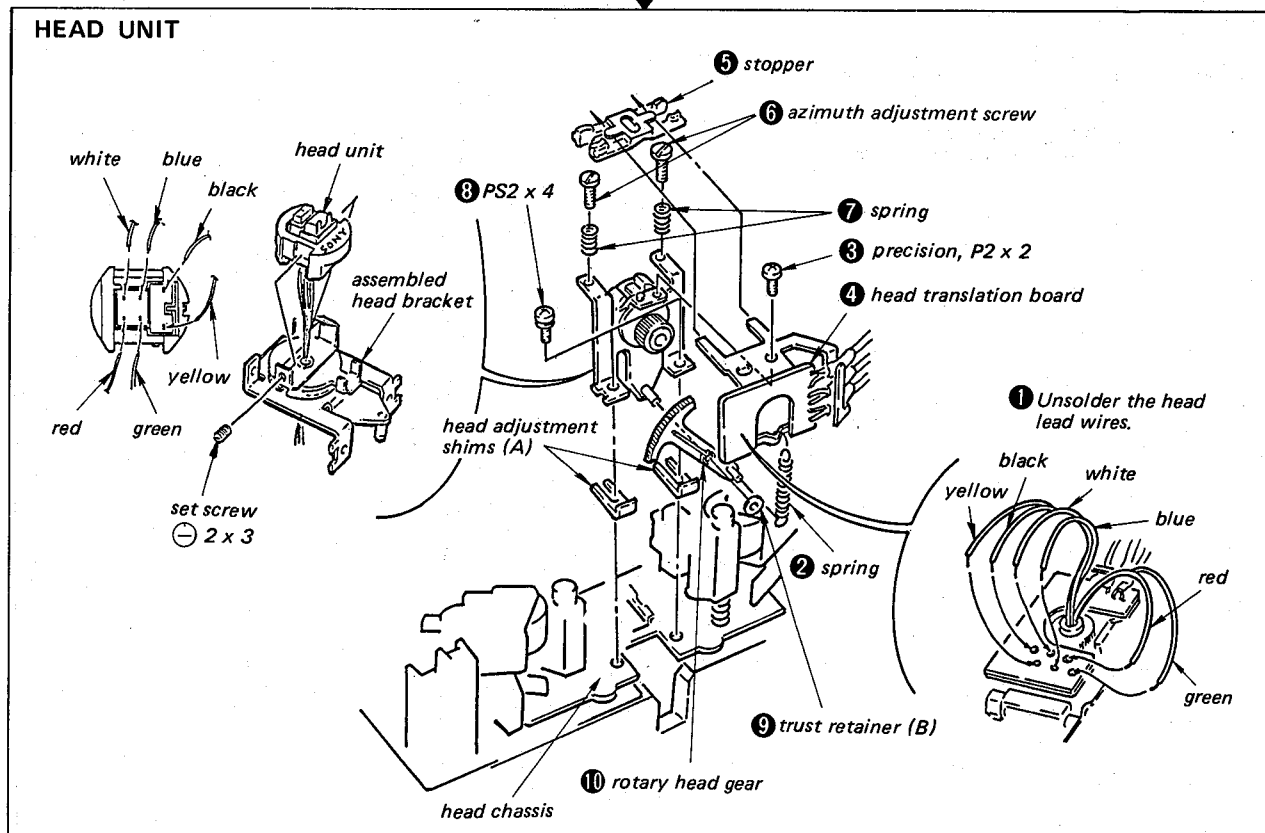


When reassembling, set the motor section after hooking the belt to the stud as shown in the figure, and then hook belt to the pulley.

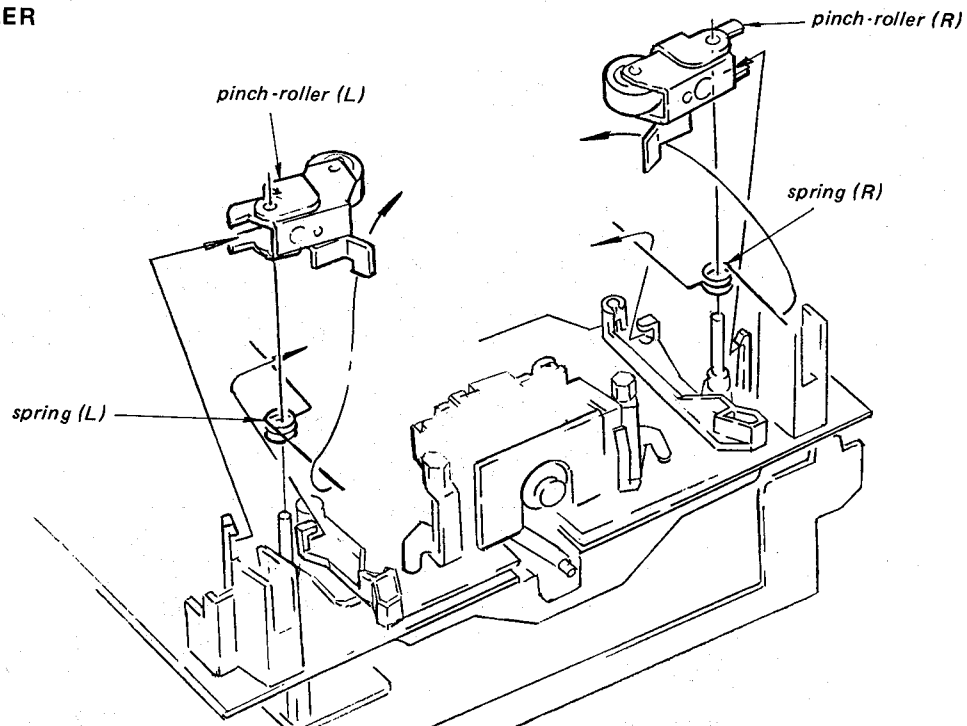
CASSETTE HOLDER



HEAD UNIT

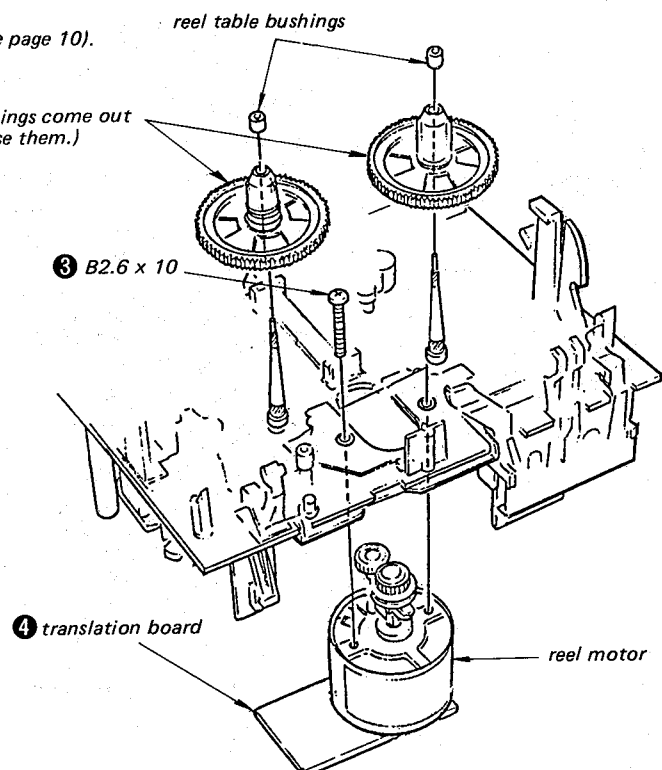


PINCH-ROLLER



REEL MOTOR

- ① Remove the ornamental plate (See page 10).
- ② Pull off reel tables.
(Note: reel-table bushings come out together. Do not loose them.)



SECTION 3 ADJUSTMENTS

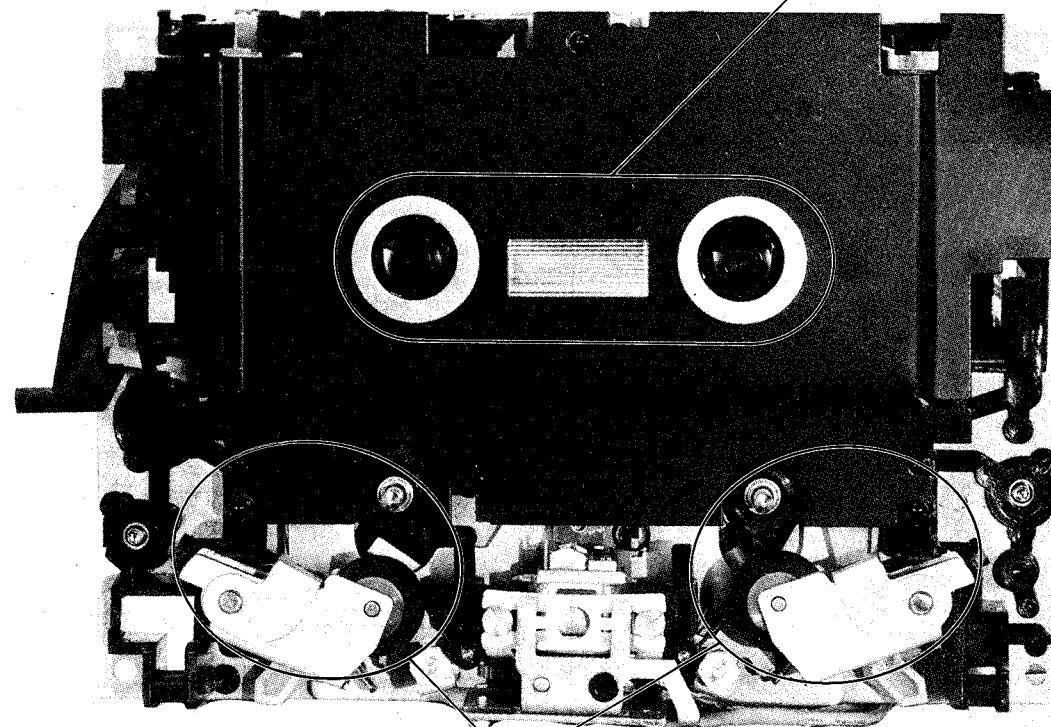
3.1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:
 record/playback/erase head rubber belts
 capstan idlers
 pinch roller
2. Demagnetize the head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

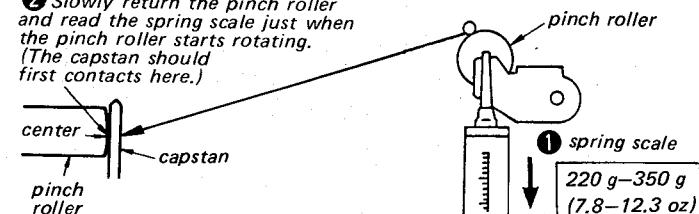
Torque	Torque meter	Meter reading
Forward	CQ-102C	30 – 60 g·cm (0.41 – 0.82 oz·inch)
Reverse	CQ-102RB	
Fast Forward and Rewind	CQ-201B	90 – 150 g·cm (1.3 – 2.1 oz·inch)
Brake	TOHNICHI Torque Gauge	10 – 100 g·cm (0.15 – 1.35 oz·inch)



Pinch Roller Pressure Measurement

— Playback Mode —

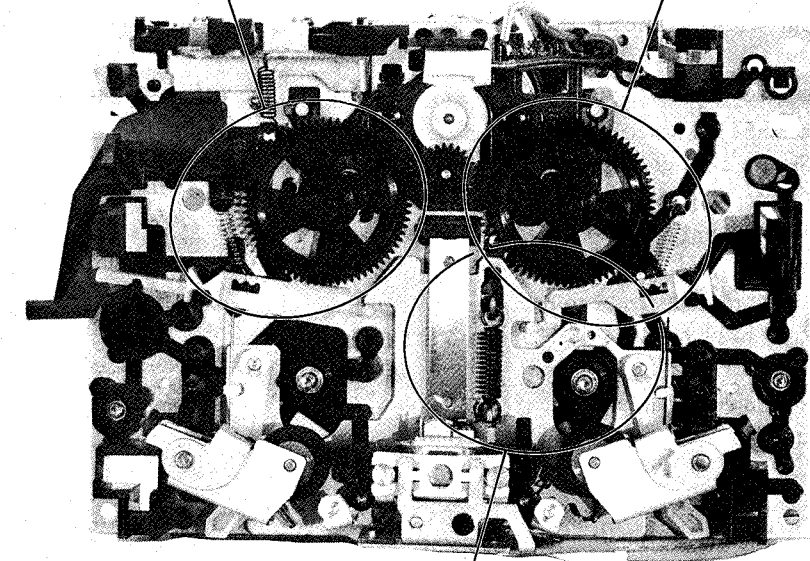
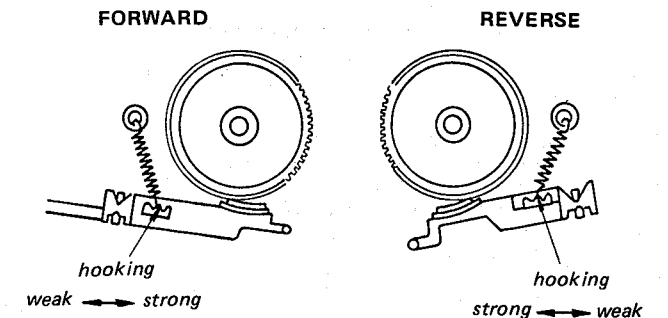
- ② Slowly return the pinch roller and read the spring scale just when the pinch roller starts rotating. (The capstan should first contacts here.)



BACK TENSION ADJUSTMENT

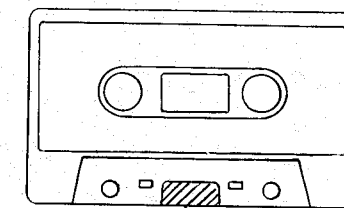
— Forward and Reverse Playback Modes —

- Forward: Torque Meter CQ-102C,
Torque 2.5–4.5 g·cm
(0.03–0.06 oz·inch)
- Reverse: Torque Meter CQ-102RB,
Torque 2.5–4.5 g·cm
(0.03–0.06 oz·inch)



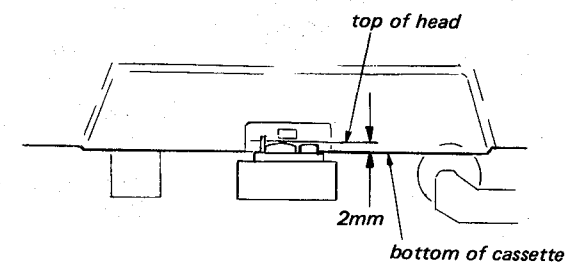
Head Position Adjustment in AMS mode

1. Prepare an adjustment cassette as shown below.

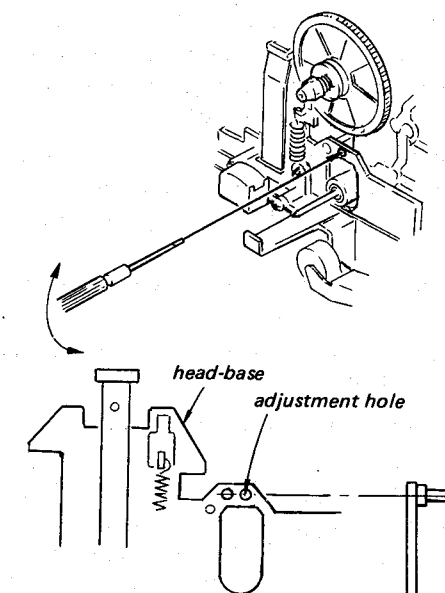


cut out hatched portion.

2. In AMS mode, confirm that the the distance between top of head and bottom of cassette is 2 mm ±0.1 mm (3/32 inch).



If it is not, insert a small screwdriver to the adjustment hole and adjust the head position by bending a head-base so that the distance between top of head and bottom of cassette is 2 mm±0.1 mm.



Precaution on Replacing

As the head center adjustment and the tape pass adjustment are affected each other, do not perform them at the same time.

Note: When the record/playback/erase head is replaced, be sure to perform the preliminary adjustment first.

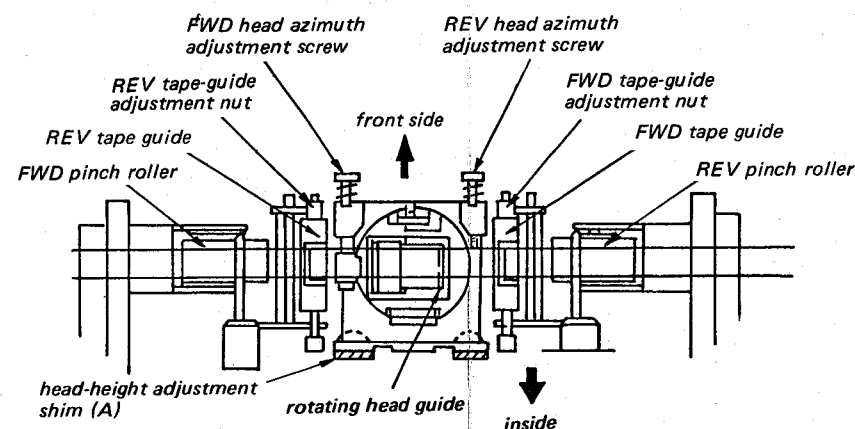
Head Center Adjustment

1. Insert a mirror tape cassette, CQ-009C or CQ-012C.
2. Place the unit in forward playback mode.
3. When the lower part of the tape is warped, loosen the head center adjustment screw. (Loosen the screw within one turn.)
4. Place the unit in reverse-playback mode.
5. When the upper part of the tape is warped, secure the adjustment screw. (Secure the screw within one turn.)
6. Repeat steps 2 to 5 several times until there is no warp both in forward and reverse mode.
7. If the warp is not disappeared, repeat steps 2 to 6 after adding or removing the head height adjustment shim (A).
8. After adjustment, lock the head center adjustment screw with locking compound.

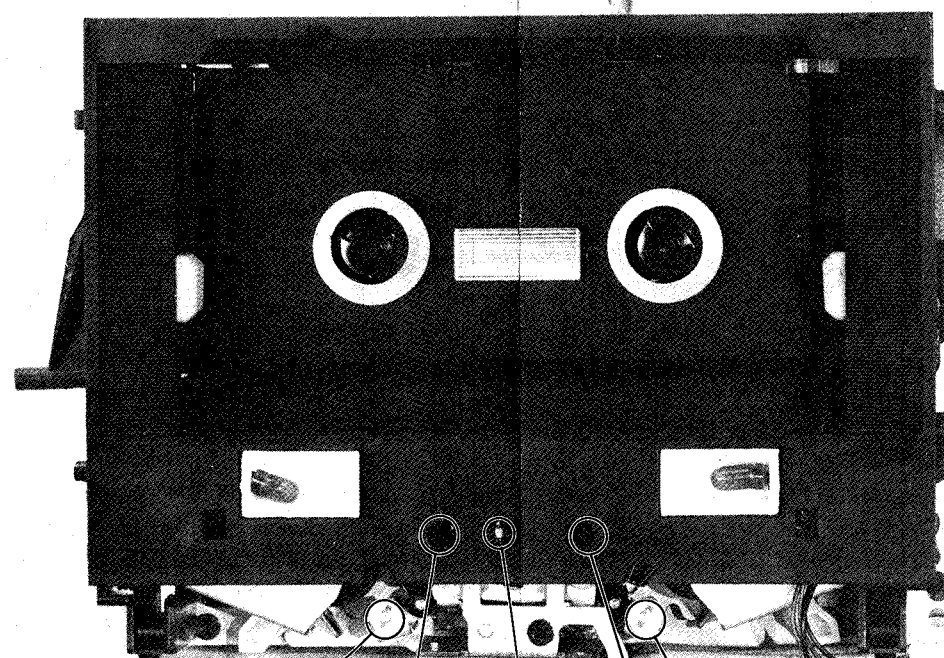
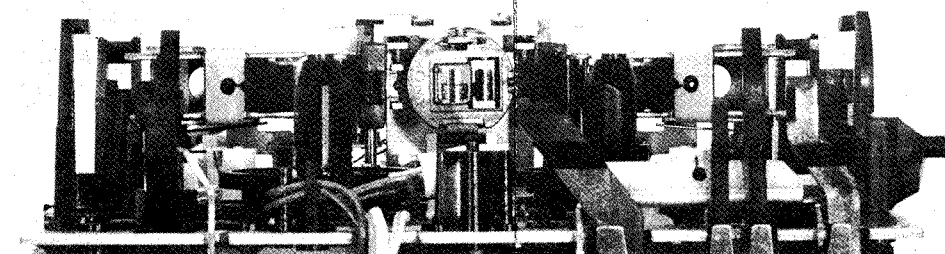
Tape Path Adjustment

1. Clean the pinch roller and the record/playback/erase head with soft cloth moistened with alcohol.
2. Mode: playback
Refer to step 1 of the Record/playback Head Azimuth Adjustment on page 18 for the setup.
3. Adjust the FWD azimuth adjustment screw in the forward-playback mode and the REV azimuth adjustment screw in the reverse-playback mode so that the oscilloscope reads the maximum output and lissajous figure is in 30 angle reading on the oscilloscope across the LINE OUT.
4. Adjust the FWD tape-guide nut in the forward-playback mode and the REV tape-guide nut in the reverse-playback mode for an in-phase lissajous pattern.
The turning amount of the nuts should be within 3/4 turns.
5. Repeat steps 3 and 4 several times until no improvement is obtained.
6. Play a mirror tape cassette in the forward-playback mode.
7. Confirm there is no tape curl at the tape guide.

Note: After these adjustments, be sure to perform the Record/playback Head Azimuth Adjustment on page 18.



VIEWED FROM TOP



FWD tape guide adjustment nut

REV head azimuth adjustment screw

REV tape guide adjustment nut

FWD head azimuth adjustment screw

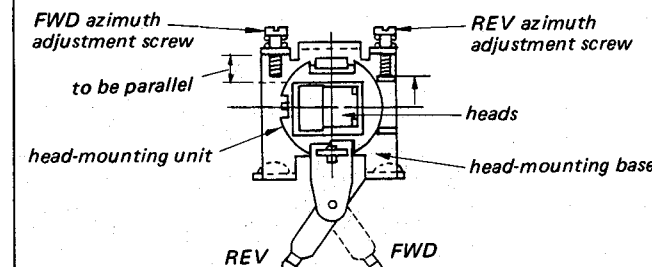
head center adjustment screw (forward-playback mode only)

HEAD UNIT ADJUSTMENT WHEN REPLACED

Perform the following preliminary adjustments before proceeding to the Head Center and Tape Path Adjustments.

Preliminary Adjustment

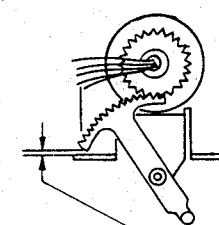
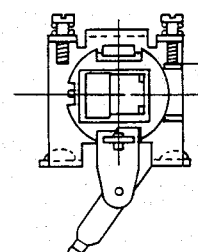
1. Install head-mounting unit on the head-mounting base by threading head lead wires through the round hole in the head-mounting base. Also refer to page 11.
2. By adjusting both head-azimuth adjustment screws in both forward-playback and reverse-playback mode head positions, align the head-compartment edge line in parallel with the edge line of the head-mounting unit at the azimuth adjustment screws. (visual adjustment)



Be sure to orient the rotary-head gear as shown below.

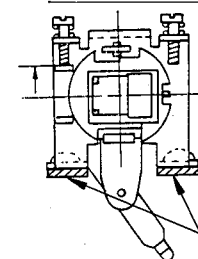
Head is positioned at reverse-playback mode

Install rotary head gear.

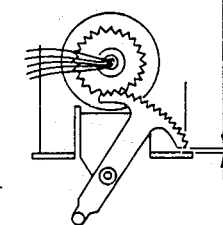


Head is positioned at forward-playback mode

to be same clearance



head-height adjustment shim (A)



3. Reassemble the head assembly, head translation board, head-height adjustment shims (A), etc, in the reverse manner of disassembly on page 11.
4. Perform the Head-Center and Tape-Path Adjustments on pages 15 and 16.
5. Perform the Head-Azimuth Adjustment on page 18.

3-2. ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in this service manual.
The adjustments should be performed for both L-CH and R-CH.

- Switches and controls should be set as follows unless otherwise specified.

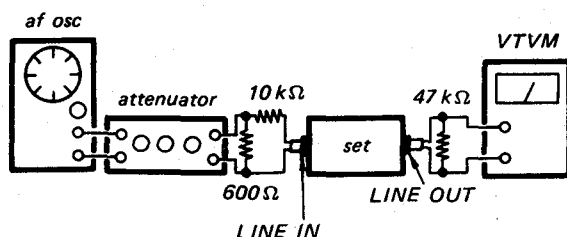
DOLBY NR switch: OFF

TIMER switch: OFF

- Standard Record:

Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

— Record Mode —



Standard Input Level

	LINE IN
source impedance	10 kΩ
input level	0.25 V (-10 dB)

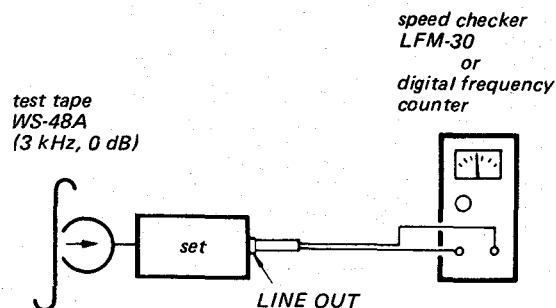
Standard Output Level

	LINE OUT
load impedance	47 kΩ
output level	0.44 V (-5 dB)

Tape Speed Adjustment

Procedure:

Mode: forward playback



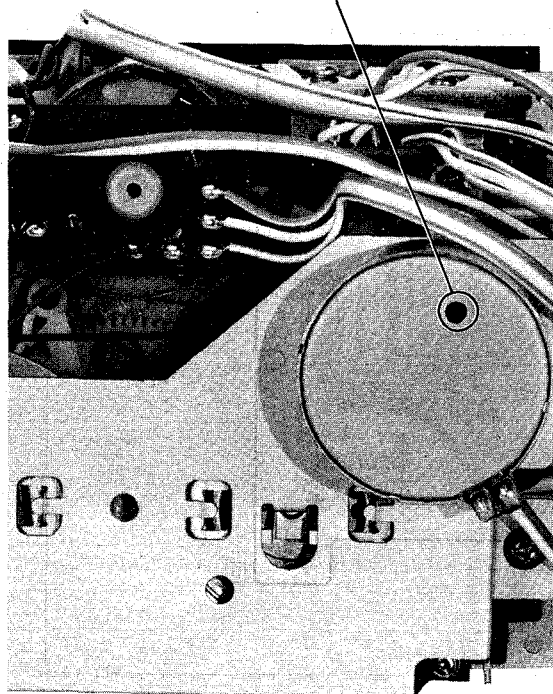
Specification:

Speed checker	Digital frequency counter
-1 ~ +1 %	2,970 Hz to 3,030 Hz

Frequency difference between the beginning and the end of the tape should be within 0.8% (25Hz).

Adjustment Location: Motor (M802)

*Built-in adjustable resistor
(Adjust the speed by using screwdriver.)
(When turning the screw clockwise,
speed is faster.)*

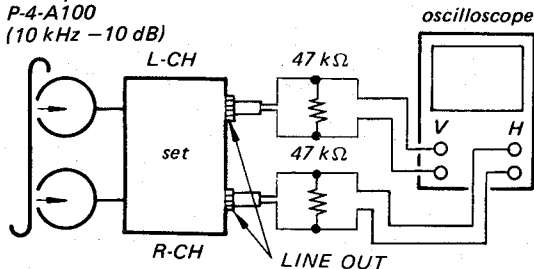


Record/playback Head Azimuth Adjustment

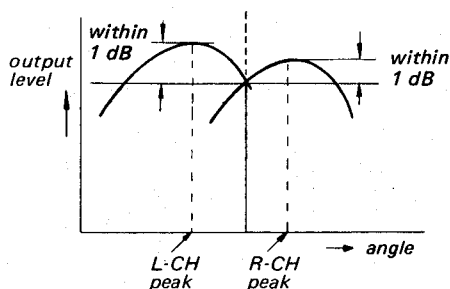
Procedure:

1. Mode: forward playback

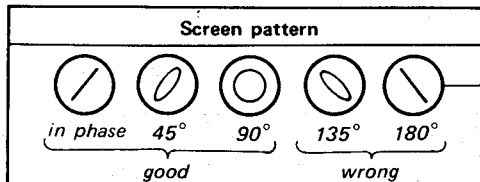
test tape
P-4-A100
(10 kHz -10 dB)



2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screws until both of output levels match together within 1 dB.

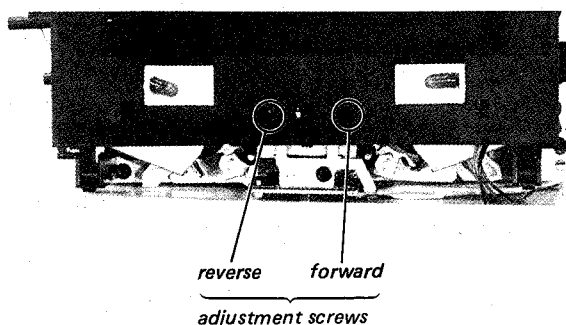


● Phase Check



3. Set in the reverse mode and repeat the steps 1-2.
4. After the adjustment, lock the screws with locking compound.

Adjustment Location:

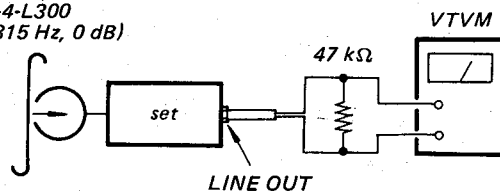


Playback Level Adjustment

Procedure:

Mode: forward playback

test tape
P-4-L300
(315 Hz, 0 dB)



Adjust the RV101 (L-CH) and RV201 (R-CH) so that the specification is met.

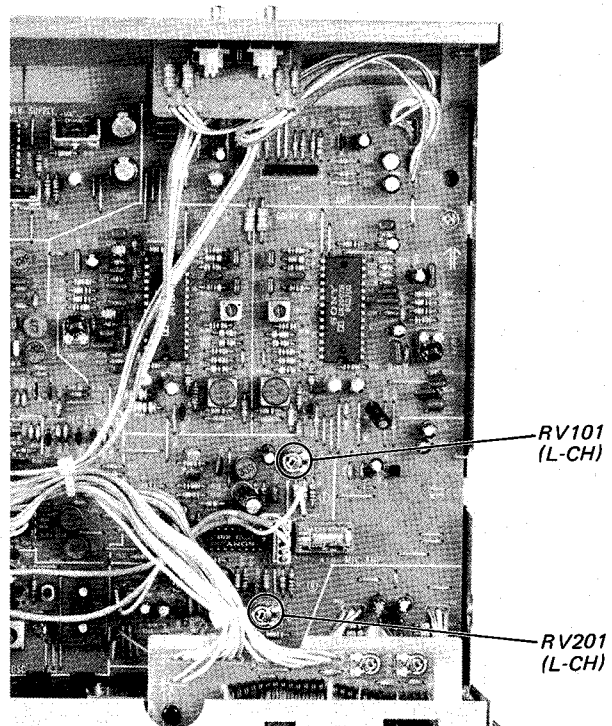
Specification:

LINE OUT level: 0.41 to 0.46 V
(-5.5 to -4.5 dB)

Level difference between channels:
less than 0.5 dB

Check that the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location: audio board



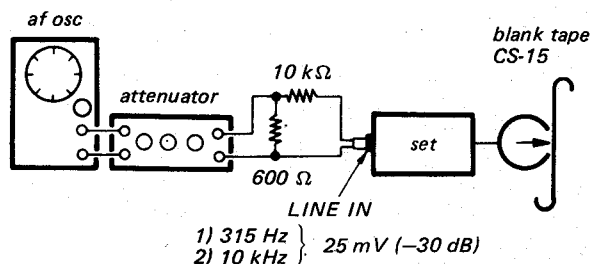
Record Bias Adjustment

Setting:

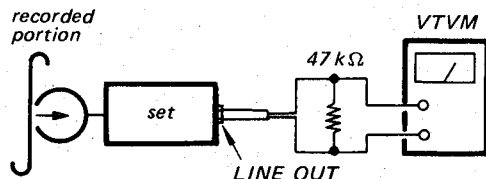
REC LEVEL control: standard record
(See page 17.)

Procedure:

1. Mode: record

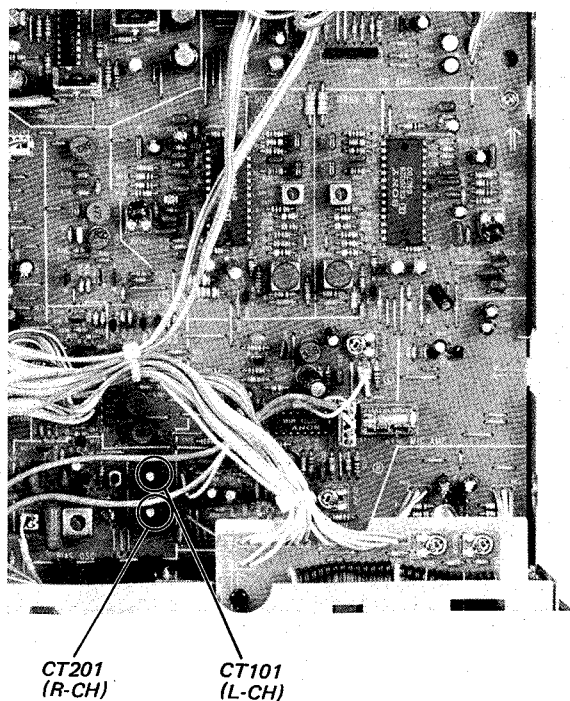


2. Mode: playback



Confirm that the 10 kHz playback output is 0 dB relative to the 315 Hz output. If necessary, adjust CT101 (L-CH), CT201 (R-CH) and repeat the steps given above.

Adjustment Location: audio board



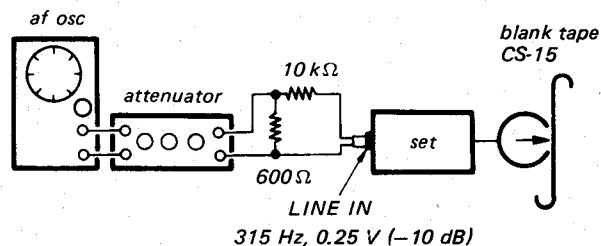
Record Level Adjustment

Setting:

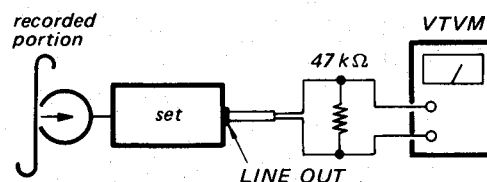
REC LEVEL control: standard record
(See page 17.)

Procedure:

1. Mode: record



2. Mode: playback



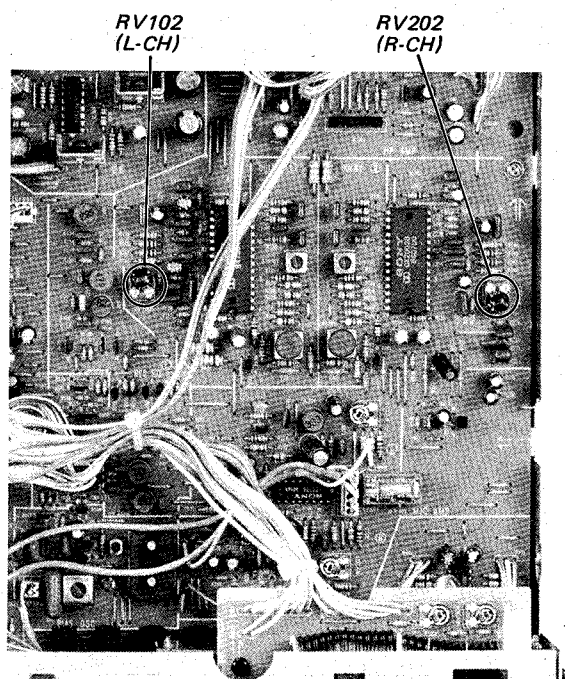
3. Play back the signal recorded in step 1.

Confirm that the signal level is within the specification below. If necessary, adjust RV102 (L-CH), RV202 (R-CH) and repeat the step 1-3.

Specification:

LINE OUT level: 0.41–0.46 V
(–5.5 to –4.5 dB)

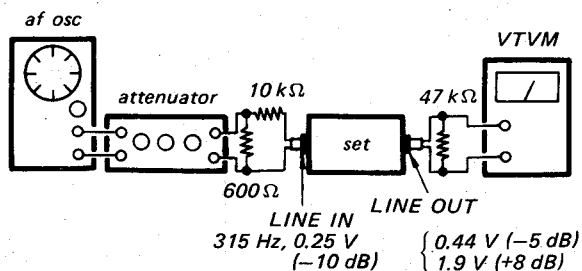
Adjustment Location: audio board



Level Meter Calibration

Procedure:

1. Mode: record



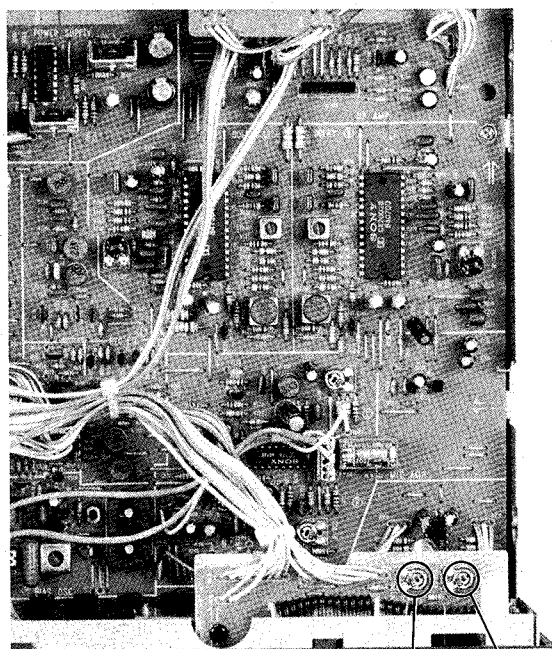
2. Set the REC LEVEL control so that the LINE OUT level is 0.44 V (-5 dB).

3. Adjust RV104 (L-CH), RV204 (R-CH) so that the 0VU (-4 dB) segment of the level meter goes on.

Note: The adjustment should be made while increasing the level.

4. Set the REC LEVEL control so that the LINE OUT level is 1.9 V (+8 dB). Make sure that all the lights in the segments go on.

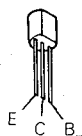
Adjustment Location: audio board



RV204 (R-CH) RV104 (L-CH)

● Semiconductor Lead Layouts

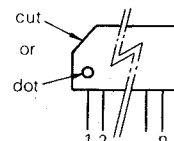
2SC2001



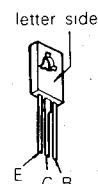
2SD774
2SD774-5



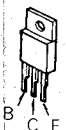
M5218L



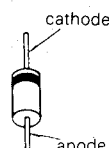
2SB731



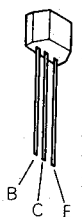
2SD1406



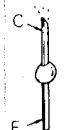
10E-2
1SS202-1
HZ9A2L
HZ11B2L



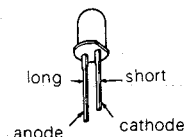
2SB808
2SC2603F
2SC634SP
2SD809-K
DTA114ES
DTA124ES
DTC124ES
DTC143TS



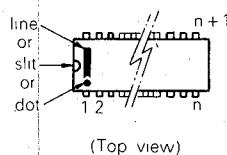
PH102



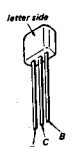
AA5638S
BG5638S
PR5638S



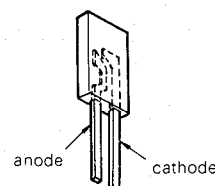
CX564-072
CX10032A
CX10033A
CX10034
CX10035
CX20027
CX20028
M50761-417P
M50783SP
MB84069UB

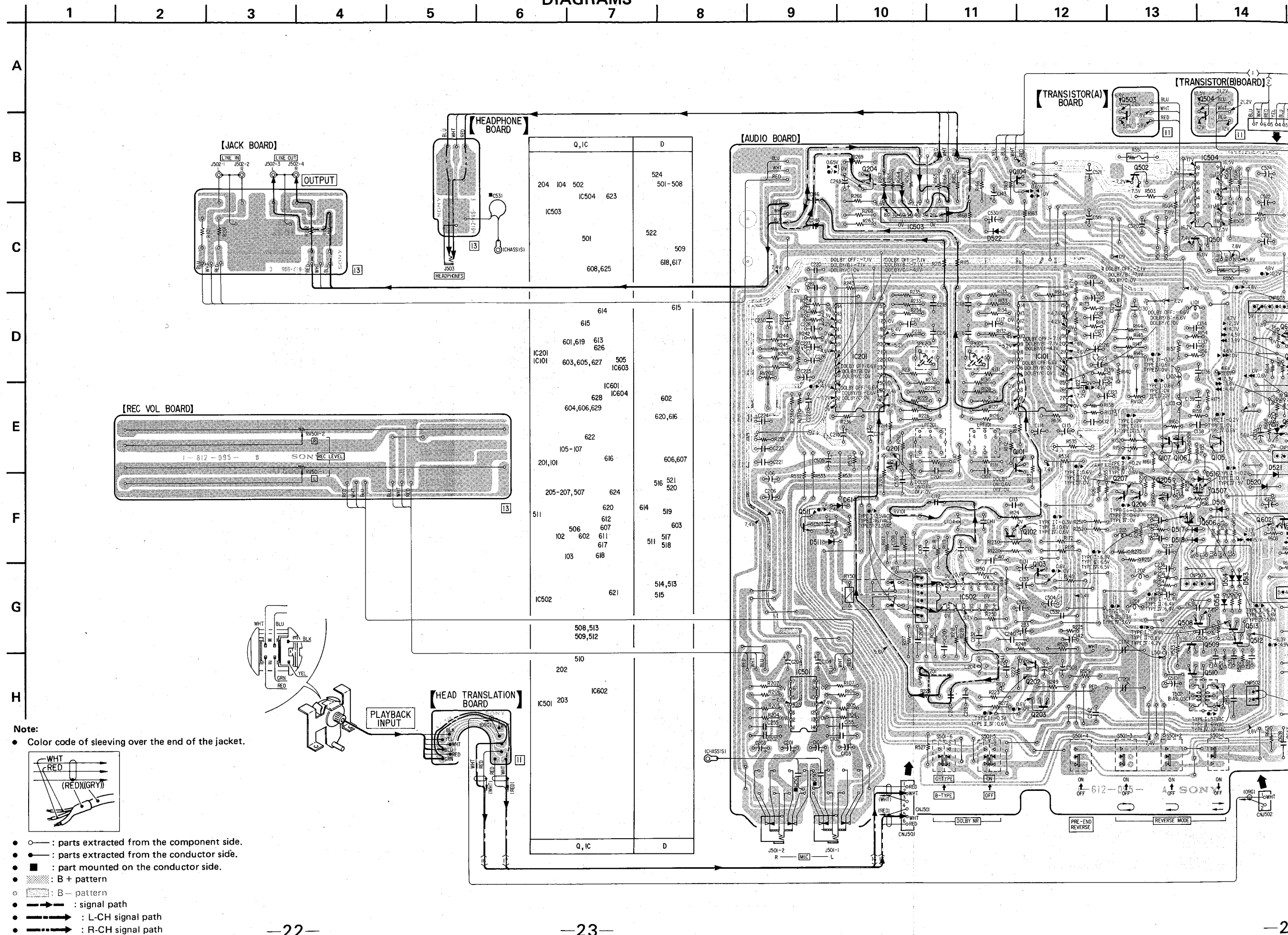


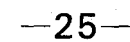
2SD1020

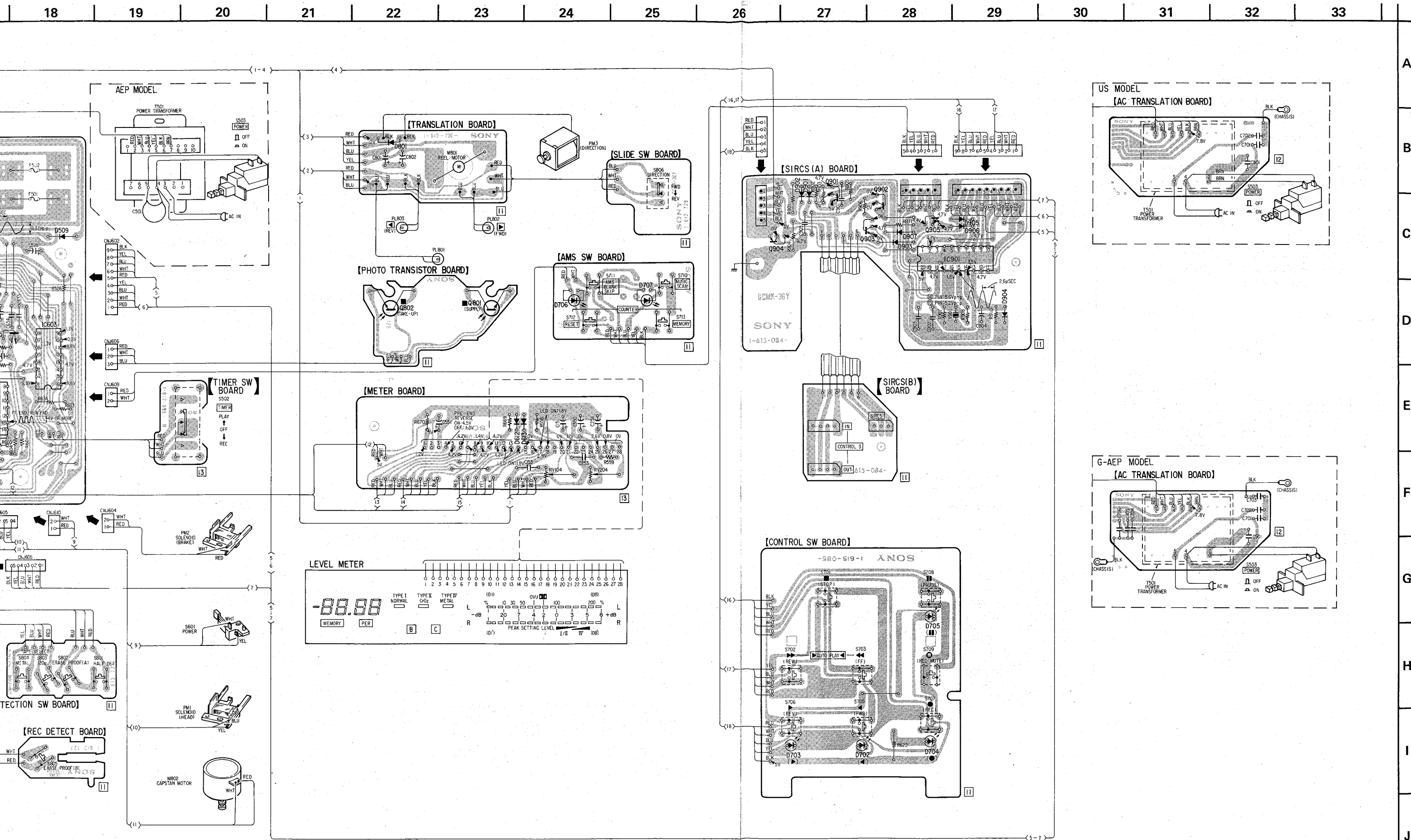


PY5531A

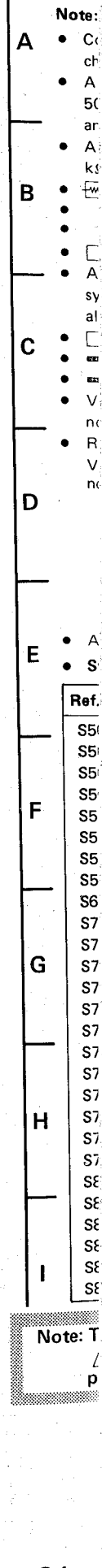











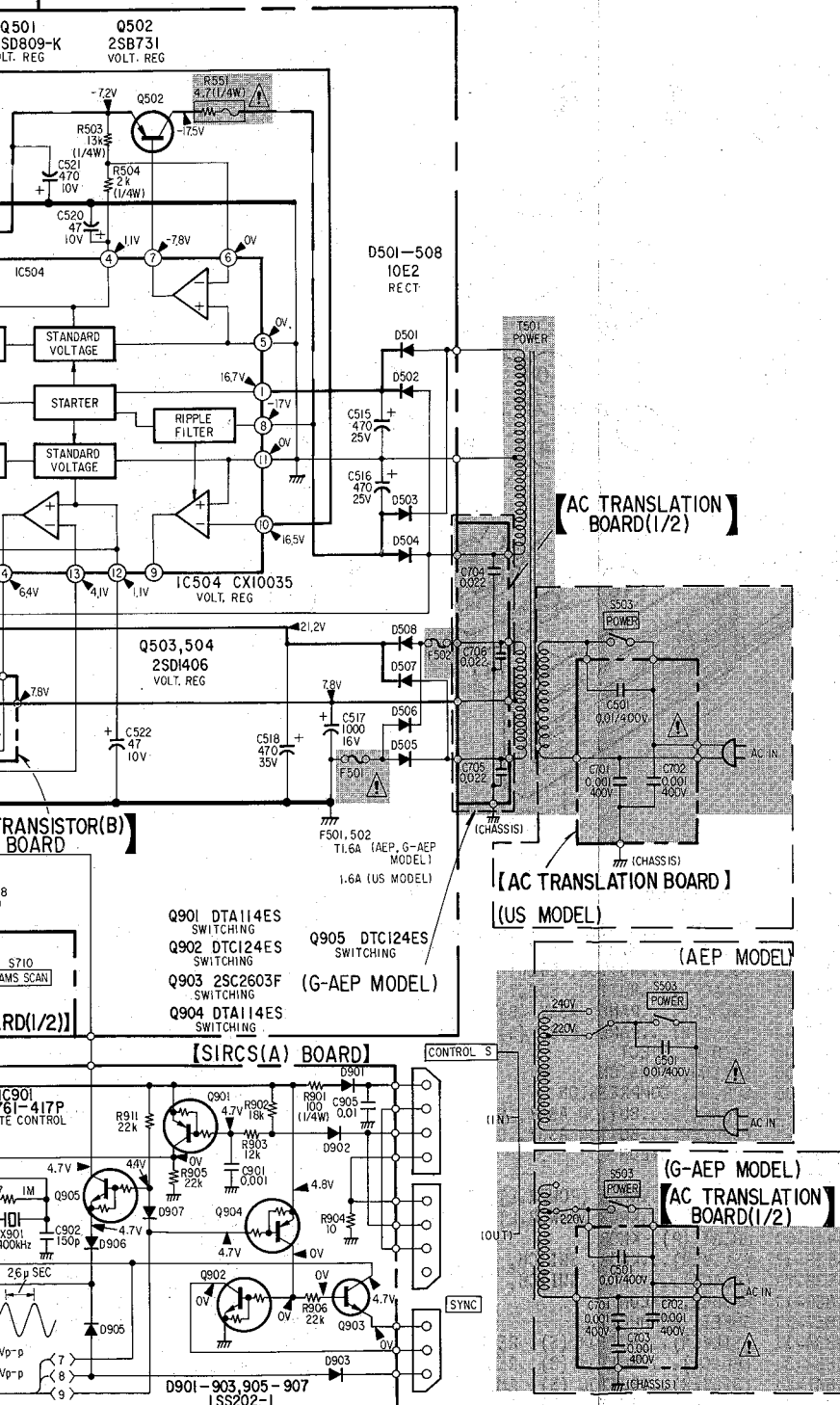




E

Ref. No.	Switch	Position
S501-1		ON
S501-2		OFF
S501-3		OFF
S501-4	PRE-END REVERSE	OFF
S501-5	DOLBY NR ON/OFF	OFF
S501-6	DOLBY NR C-TYPE/B-TYPE	B-TYPE
S502	TIMER	OFF
S503	POWER	OFF
S601	POWER	OFF
S701	STOP	OFF
S702	REW	OFF
S703	FF	OFF
S705	FWD	OFF
S706	REV	OFF
S707	REC	OFF
S708	PAUSE	OFF
S709	PEC MUTE	OFF
S710	MUSIC SCAN	OFF
S711	AMS BLANK SKIP	OFF
S712	RESET	OFF
S713	MEMORY	OFF
S801	HALF DET	OFF
S802	ERASE PROOF (A)	OFF
S803	TAPE SELECT (120 μ)	OFF
S804	TAPE SELECT (METAL)	OFF
S805	ERASE PROOF (B)	OFF
S806	DIRECTION	FWD

Note: The components identified by shading and mark are critical for safety. Replace only with part number specified.



SECTION 5


EXPLODED VIEWS AND PARTS LIST

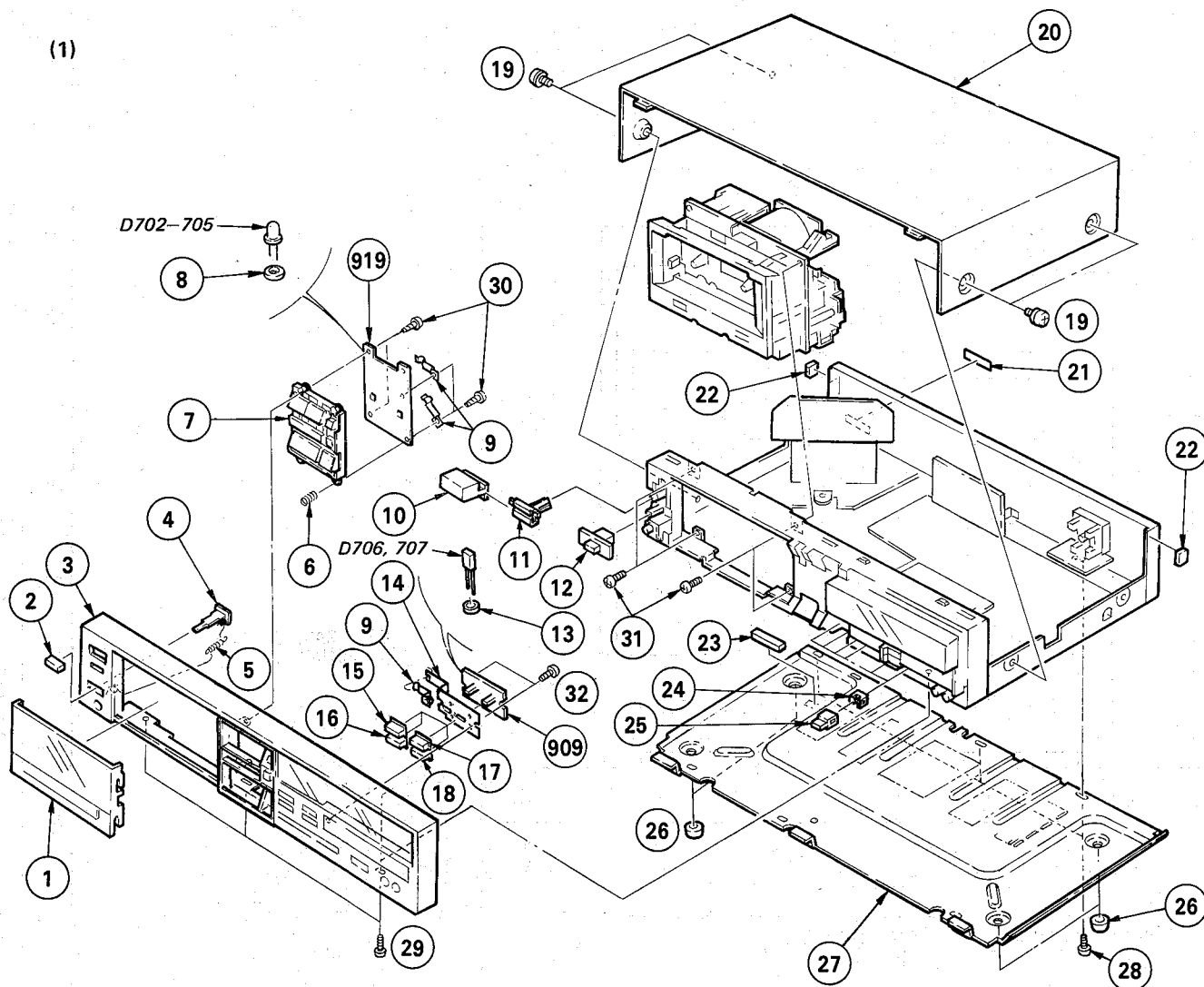
NOTE:

The mechanical parts with no reference number in the exploded views are not supplied.

Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

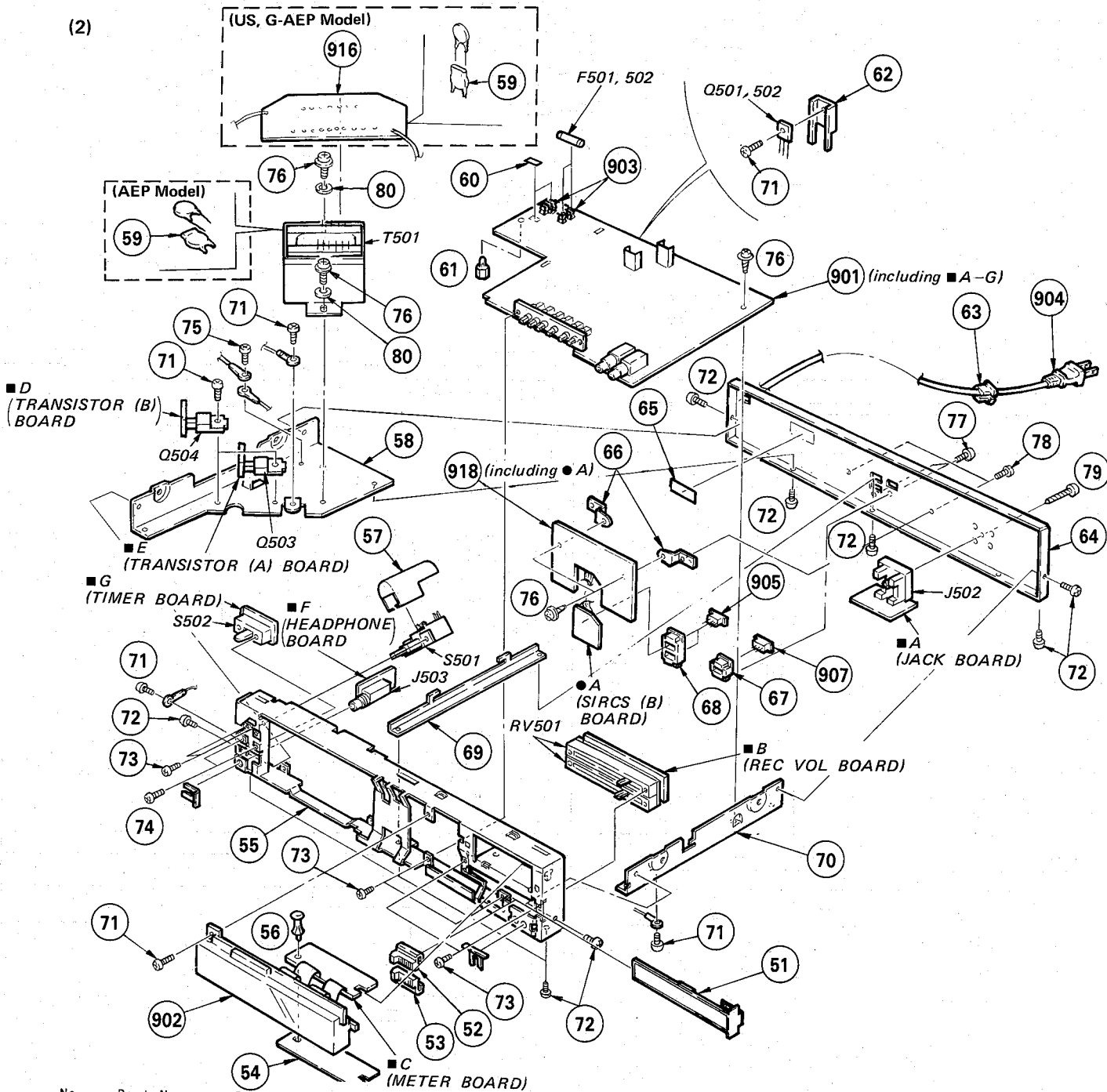
The construction parts of an assembled part are indicated with a collation number in the remark column.

The components identified by shading and mark  are critical for safety. Replace only with part number specified.



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	X-3318-828-1	(BLACK)...WINDOW ASSY (B), CASSETTE		17	3-318-834-01	(SILVER)...BUTTON (S), MEMORY	
	X-3318-829-1	(SILVER)...WINDOW ASSY (B), CASSETTE			3-318-834-21	(BLACK)...BUTTON (B), MEMORY	
2	3-304-419-00	(SILVER)...BUTTON, EJECT		18	3-318-847-21	(SILVER)...BUTTON (S), MS	
	3-304-419-31	(BLACK)...BUTTON, EJECT			3-318-847-41	(BLACK)...BUTTON (B), MS	
3	X-3318-830-1	(BLACK)...PANEL ASSY (B), FRONT		19	4-889-321-01	(SILVER)...SCREW	
	X-3318-831-1	(SILVER)...PANEL ASSY (S), FRONT			4-889-321-11	(BLACK)...SCREW	
4	*3-318-848-01	SLIDER, EJECT		20	3-307-532-11	(BLACK)...CASE	
5	3-540-244-00	SPRING, TENSION			3-318-532-31	(SILVER)...CASE	
6	3-554-017-00	SPRING, COMPRESSION		21	*4-302-759-00	LABEL, SERIAL NUMBER	
7	X-3318-832-1	(BLACK)...BUTTON ASSY, CONTROL		22	9-911-840-XX	RUBBER (B)	
	X-3318-833-1	(SILVER)...BUTTON ASSY, CONTROL		23	9-911-851-XX	CUSHION	
8	3-318-865-01	WASHER, NYLON		24	4-864-307-00	RING	
9	*3-318-866-01	SPRING		25	3-318-909-11	(BLACK)...KNOB, PUSH	
10	3-318-911-01	(SILVER)...KNOB (POWER.L), T MOLD			3-318-909-21	(SILVER)...KNOB, PUSH	
	3-318-911-11	(BLACK)...KNOB (POWER.L), T MOLD		26	3-576-731-00	FELT (H)	
11	3-318-915-01	JOINT (P), KNOB		27	*3-307-540-00	PLATE, BOTTOM	
12	3-307-538-11	(SILVER)...KNOB, SWITCH, TIMER		28	7-685-872-01	SCREW +BVTT 3X8	
	3-307-538-21	(BLACK)...KNOB, SWITCH, TIMER		29	7-685-871-01	SCREW +BVTT 3X6 (S)	
13	3-318-865-11	WASHER, NYLON		30	7-685-146-19	SCREW +BTP 3X8 TYPE2 N-S	
14	*3-318-867-01	SHEET, CONDUCTIVE		31	7-685-751-09	SCREW +BVTT 3X6 (S)	
15	3-318-834-11	(SILVER)...BUTTON (S), RESET		32	7-687-204-11	TOTSU PTPWH 2X6 NON-SLIT, TYPE2	
	3-318-834-31	(BLACK)...BUTTON (B), RESET		909	*1-612-102-11	PC BOARD, AMS SW	
16	3-318-847-11	(SILVER)...BUTTON (S), AMS		919	*1-615-085-11	PC BOARD, CONTROL SW	
	3-318-847-31	(BLACK)...BUTTON (B), AMS					

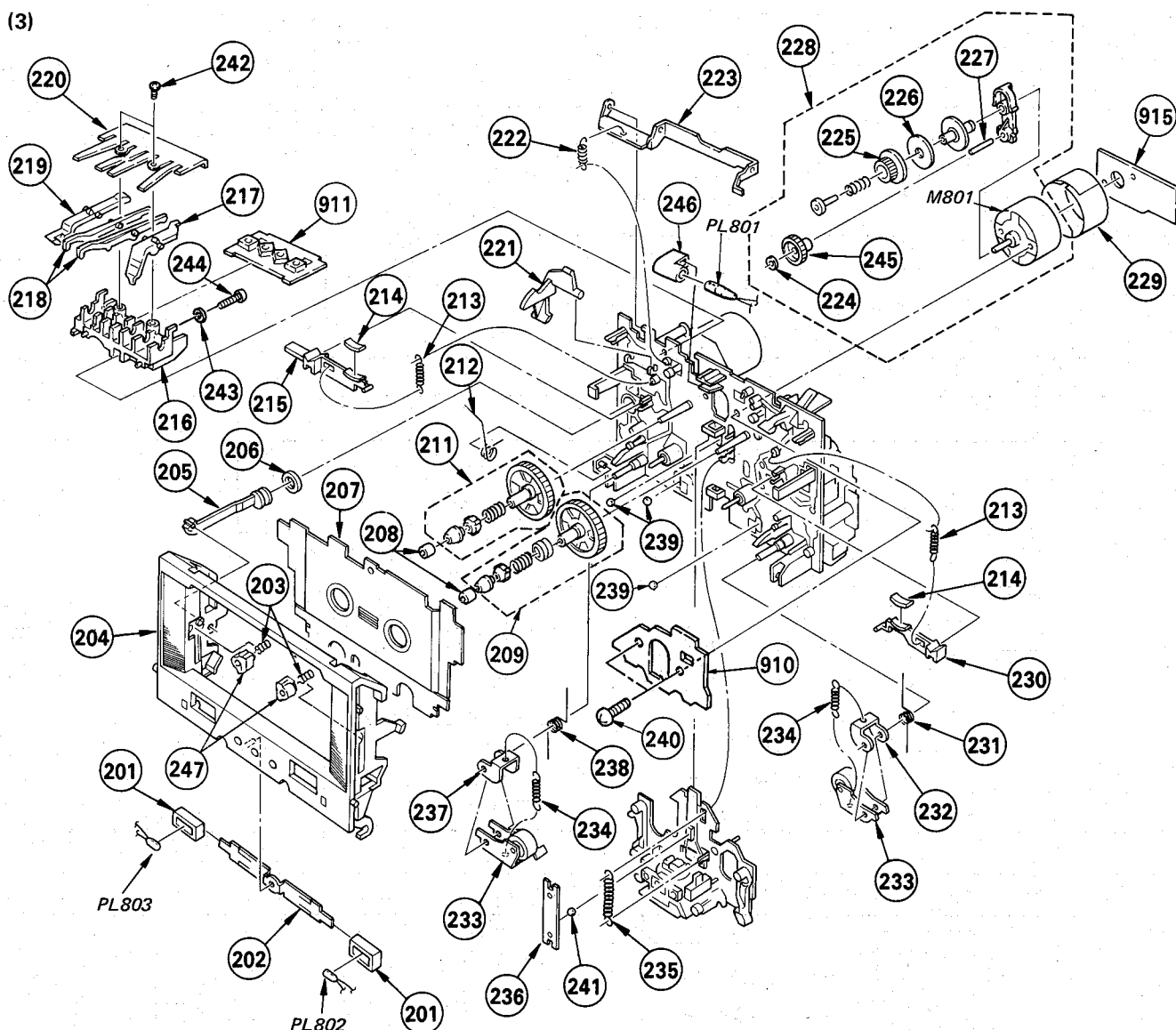
TC-FX520R



No.	Part No.	Description	Remarks
51	X-3318-803-1	(SILVER)...PLATE ASSY (B), ORNAMENTAL	
	X-3318-804-1	(BLACK)...PLATE ASSY (B), ORNAMENTAL	
52	3-318-913-11	(BLACK)...KNOB (LEFT), REC CONTROL	
	3-318-913-21	(SILVER)...KNOB (LEFT), REC CONTROL	
53	3-318-914-11	(BLACK)...KNOB (RIGHT), REC CONTROL	
	3-318-914-21	(SILVER)...KNOB (RIGHT), REC CONTROL	
54	*3-318-837-01	PLATE, SHIELD	
55	*3-318-857-11	CHASSIS, AMPLIFIER	
56	4-812-134-00	RIVET NYLON, 3.5	
57	3-575-524-00	COVER, POWER SWITCH	
58	*3-307-525-21	PLATE, SIDE, LEFT	
59	4-875-455-01	COVER (DIA. 20), CAPACITOR	
60	*3-701-946-22	(US).....LABEL, FUSE	
	*3-701-948-16	(AEP,G-AEP)...LABEL, FUSE	
61	*4-861-614-51	HOLDER, PC BOARD	
62	*3-312-615-31	HEAT SINK	
63	3-703-244-00	(AEP,G-AEP)...BUSHING (S) (4516), CORD	
	3-703-571-00	(US).....BUSHING (2104), CORD	
64	*3-318-884-01	(US).....PLATE, JACK	
	*3-318-884-11	(AEP,G-AEP)...PLATE, JACK	
65	*3-703-044-26	(US).....LABEL, CAUTION	
66	*3-318-878-01	BRACKET, PC BOARD	
67	*3-322-819-01	HOLDER, CONNECTOR	

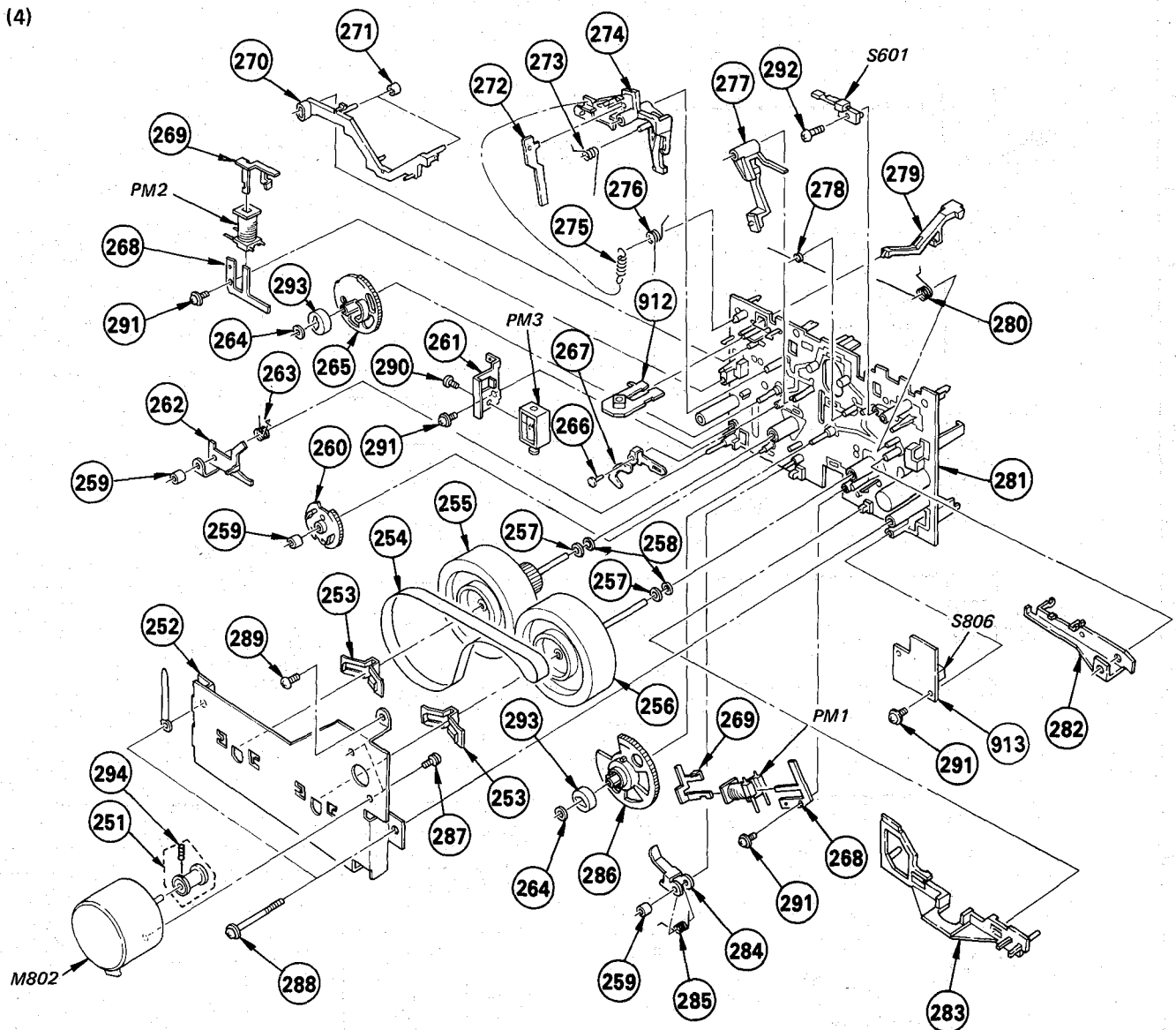
No.	Part No.	Description	Remarks
68	*3-322-818-01	HOLDER, CONNECTOR	
69	*3-318-828-01	PLATE, RELAY	
70	*3-318-827-01	PLATE, SIDE, RIGHT	
71	7-685-871-01	SCREW +BVTT 3X6 (S)	
72	7-685-872-01	SCREW +BVTT 3X8	
73	7-682-646-01	SCREW +PS 3X5	
74	7-628-254-05	SCREW +PS 2.6X5	
75	7-685-870-01	SCREW +BVTT 3X5	
76	3-703-249-01	SCREW, S TIGHT, +PTTWH 3X6	
77	7-685-133-19	SCREW +P 2.6X6 TYPE2 NON-SLIT	
78	7-682-546-09	SCREW +B 3X5	
79	7-685-146-19	SCREW +BTP 3X8 TYPE2 N-S	
80	7-623-210-22	SW 4, TYPE 2	
901	*A-2056-277-A	PC BOARD ASSY, AUDIO	
902	1-520-472-21	METER, LEVEL (LED INDICATOR)	
903	1-533-162-00	HOLDER, FUSE	
904	△ 1-534-817-XX	(AEP,G-AEP)...CORD, POWER, EULO PLUG	
	△ 1-551-628-00	(US).....CORD, POWER	
905	*1-560-039-00	PIN, CONNECTOR	
907	*1-560-280-00	CONNECTOR PIN 3P	
916	*1-612-978-11	(US,G-AEP)....PC BOARD, AC TRANSLATION	
918	*1-615-084-11	PC BOARD, CIRCS	

(3)



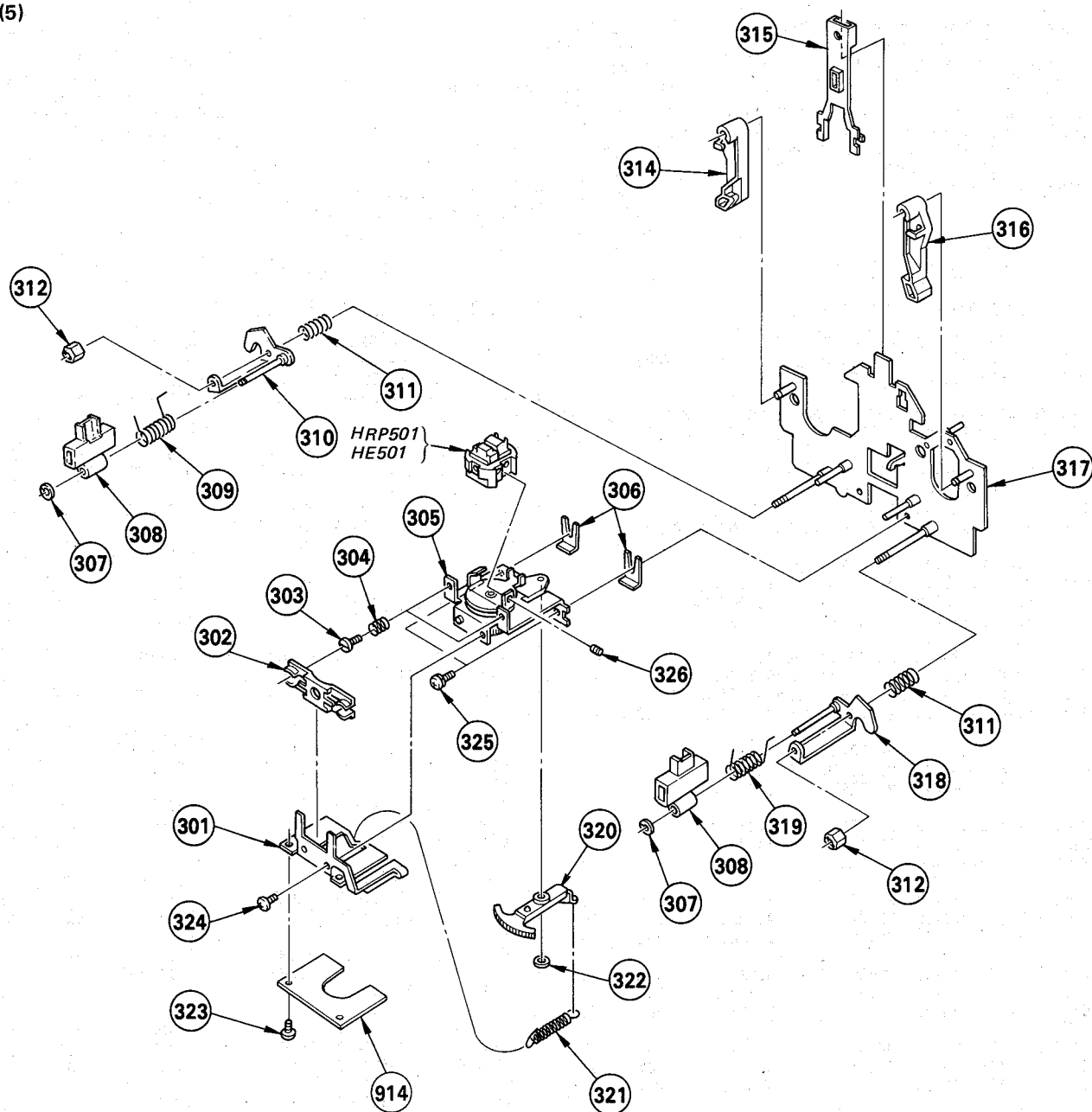
No.	Part No.	Description	REMARKS	No.	Part No.	Description	REMARKS
201	3-307-459-00	RUBBER, HOLDER		225	3-575-324-00	GEAR, LIMITER	
202	3-319-640-01	HOLDER, LAMP		226	3-564-027-11	FELT, LIMITER	
203	3-610-808-00	SPRING (I)		227	3-575-304-00	SHAFT, GEAR, FR	
204	3-319-682-01	HOLDER, CASSEETTE		228	X-3319-612-1	MOTOR ASSY, REEL	224, 225, 226, 227, 245
205	3-319-613-01	PISTON (B)		229	3-575-457-00	PLATE (B), SHIELD, MOTOR	
206	3-312-441-00	RING, PISTON		230	*3-319-615-01	LEVER (RIGHT), BACK TENSION	
207	X-3318-819-1	RETAINER ASSY, CASSETTE		231	3-319-650-01	SPRING (R)	
208	3-319-607-01	BUSHING, REEL TABLE		232	*3-319-652-01	PLATE (RIGHT), LIMITER	
209	X-3319-626-1	TABLE ASSY (R), REEL		233	X-3319-607-1	PINCH LEVER ASSY	
210		234	3-319-686-01	SPRING, TENSION	
211	X-3319-627-1	TABLE ASSY (L), REEL		235	3-319-685-01	SPRING, TENSION	
212	3-319-614-01	SPRING		236	3-319-601-01	SPRING	
213	3-319-694-01	SPRING, TENSION		237	*3-319-653-01	PLATE (LEFT), LIMITER	
214	3-575-346-01	FELT, BREKE		238	3-319-651-01	SPRING (L)	
215	*3-319-611-01	LEVER (LEFT), BACK TENSION		239	7-671-112-01	STEEL, BALL	
216	3-319-670-01	HOLDER, SWITCH, DETECTION		240	7-621-775-60	SCREW +B 2.6X12	
217	3-319-605-01	LEVER, METAL DETECTION		241	7-671-112-11	BALL, STEEL	
218	3-319-603-01	LEVER, REC DETECTION		242	7-685-102-21	SCREW +PTP 2.6X4 TYPE2 SLIT	
219	3-319-604-01	LEVER, HALF DETECTION		243	7-688-002-01	W 2.6, SMALL	
220	3-319-602-01	SPRING		244	7-685-865-01	SCREW +BVTT 2.6X12 (S)	
221	3-319-669-01	LEVER, EJECT		245	3-575-332-00	GEAR, FR	
222	3-312-432-00	SPRING, TENSION		246	3-319-636-01	RUBBER, LAMP HOLDER	
223	*3-319-678-01	LEVER, SWITCH LIFT		247	3-319-693-01	RUBBER, CASSETTE HOLDER	
224	3-307-394-00	RETAINER (B), THRUST		910	*1-612-725-11	PC BOARD, PH.T	
				911	*1-612-726-11	PC BOARD, DETECTION SW	
				915	*1-612-730-11	PC BOARD, TRANSLATION	

(4)



No.	Part No.	Description	REMARKS	No.	Part No.	Description	REMARKS
251	X-3319-617-1	PULLEY ASSY, MOTOR		274	*X-3319-614-1	LEVER ASSY, PAUSE	
252	*3-319-665-01	RETAINER, THRUST		275	3-555-124-00	SPRING, TENSION	
253	3-319-608-01	RETAINER, THRUST		276	3-319-637-01	SPRING (R)	
254	3-319-630-01	BELT (R), CAPSTAN		277	*X-3319-615-1	LEVER ASSY, FWD LOCK	
255	X-3319-606-1	FLYWHEEL (T) ASSY		278	3-319-649-01	SPRING	
256	X-3319-601-1	FLYWHEEL ASSY		279	3-319-666-01	LEVER (RIGHT), REC DETECTION	
257	3-701-438-11	WASHER, 2.5		280	3-319-633-01	SPRING	
258	3-307-482-00	WASHER, LUMILER		281	X-3319-611-1	CHASSIS ASSY, MECHANICAL	
259	3-319-607-01	BUSHING, REEL TABLE		282	*3-319-676-01	LEVER, FWD	
260	3-319-674-01	GEAR, REVERSE CAM		283	*3-319-681-01	SLIDER, REVERSE	
261	*3-319-639-01	BRACKET, TRIGGER PM		284	*3-319-658-01	LEVER, TRIGGER KICK	
262	*3-319-628-01	LEVER, REVERSE TRIGGER		285	3-319-660-01	SPRING	
263	3-319-648-01	SPRING		286	3-319-689-01	GEAR, FWD CAM	
264	3-307-394-00	RETAINER (B), THRUST		287	7-628-253-95	SCREW +PS 2.6X4	
265	3-319-688-01	GEAR, PAUSE CAM		288	7-685-879-01	SCREW +BVTT 3X30 (S)	
266	*3-319-664-01	SHAFT, CONTROL LEVER		289	7-685-646-21	SCREW +BVTP 3X8 (S)	
267	*3-319-683-01	LEVER, CONTROL, TRIGGER		290	7-685-850-01	SCREW +BVTT 2X3 (S)	
268	3-307-332-00	ARBOR, FIXED		291	7-687-204-11	TOTSU PTPWH 2X6 NON-SLIT, TYPE2	
269	3-307-333-00	ARBOR, TRIGGER		292	7-685-792-01	SCREW +PTT 2.6X5	
270	*3-319-668-01	PLATE, BRAKE		293	1-452-202-00	MAGNET	
271	3-319-662-01	RUBBER, BRAKE		294	7-621-733-08	SET-SCT, HEX 2X4 FLAT POINT	
272	3-319-612-01	SPRING		912	*1-612-727-11	PC BOARD, REC DET	
273	3-319-606-01	SPRING		913	*1-614-396-11	PC BOARD, SLIDE SW	

(5)



No.	Part No.	Description	REMARKS	No.	Part No.	Description	REMARKS
301	3-319-620-01	PLATE, ORNAMENTAL, HEAD		312	3-319-638-01	NUT, ADJUSTMENT	
302	3-319-644-01	STOPPER		314	3-319-643-01	LEVER (L), P ROLLER SELECTION	
303	3-319-663-01	SCREW, ADJUSTMENT, AZIMUTH		315	3-319-684-01	PROTECTOR, EDGE	
304	3-307-460-00	SPRING, COMPRESSION		316	3-319-642-01	LEVER (R), P ROLLER SELECTION	
305	X-3319-613-1	BRACKET COMPLETE ASSY, HEAD		317	*X-3319-610-1	CHASSIS ASSY, REVERSE HEAD	
306	3-307-477-01	SEAM (A), HEAD ADJUSTMENT		318	*X-3319-608-1	LEVER (RIGHT) ASSY, GUIDE	
	3-307-477-11	SEAM (A), HEAD ADJUSTMENT		319	3-306-250-00	SPRING (RIGHT)	
	3-307-477-21	SEAM (A), HEAD ADJUSTMENT		320	3-319-625-01	GEAR, ROTARY HEAD	
	3-307-477-31	SEAM (A), HEAD ADJUSTMENT		321	3-306-258-01	SPRING, TENSION	
	3-307-477-41	SEAM (A), HEAD ADJUSTMENT		322	7-624-102-04	STOP RING 1.5	
307	3-307-394-00	RETAINER (B), THRUST		323	7-685-850-01	SCREW +BVTT 2X3 (S)	
308	3-306-269-01	GUIDE, TAPE		324	7-627-553-17	SCREW, PRECISION +P 2X2	
309	3-306-249-00	SPRING (LEFT)		325	7-628-253-05	SCREW +PS 2X4	
310	*X-3319-609-1	LEVER (LEFT) ASSY, GUIDE		326	7-621-710-26	SET-SCREW, SLOT 2X3 FLAT POINT	
311	3-537-215-00	SPRING, COMPRESSION		914	*1-612-729-11	PC BOARD, HEAD TRANSLATION	

SECTION 6 ELECTRICAL PARTS LIST

NOTE:

- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

MF:μF, PF:μμF.

RESISTORS

- All resistors are in ohms.
- F: nonflammable

COILS


MMH: mH, UH: μH

SEMICONDUCTORS



In each case, U: μ, for example:

UA...: μA..., UPA...: μPA..., UPC...: μPC,


UPD...: μPD...

The components identified by shading and mark  are critical for safety. Replace only with part number specified.

ELECTRICAL PARTS

Ref.No.	Part No.	Description
901	*A-2056-277-A	PC BOARD ASSY, AUDIO
902	1-520-472-21	METER, LEVEL (LED INDICATOR)
903	1-533-162-00	HOLDER, FUSE
904	 1-534-817-XX (AEP, G-AEP)...CORD, POWER, EULO PLUG	
	 1-551-628-00 (US).....CORD, POWER	
905	*1-560-039-00	PIN, CONNECTOR
906	*1-560-070-00	BASE POST
907	*1-560-280-00	CONNECTOR PIN 3P
908	*1-560-594-00	BASE POST, MCD CONNECTOR 9P
909	*1-612-102-11	PC BOARD, AMS SW
910	*1-612-725-11	PC BOARD, PH.T
911	*1-612-726-11	PC BOARD, DETECTION SW
912	*1-612-727-11	PC BOARD, REC DETECT
913	*1-612-728-11	PC BOARD, SLIDE SW
914	*1-612-729-11	PC BOARD, HEAD TRANSLATION
915	*1-612-730-11	PC BOARD, TRANSLATION
916	*1-612-978-11	(US, G-AEP)...PC BOARD, AC TRANSLATION
917	*1-614-396-11	PC BOARD, SLIDE SW
918	*1-615-084-11	PC BOARD, CIRCS
919	*1-615-085-11	PC BOARD, CONTROL SW
C101	1-123-382-00	ELECT 3.3MF 20% 50V
C102	1-162-037-00	CERAMIC 100PF 5% 50V
C103	1-123-382-00	ELECT 3.3MF 20% 50V
C104	1-123-380-00	ELECT 1MF 20% 50V
C106	1-123-369-00	ELECT 4.7MF 20% 25V
C107	1-162-111-00	CERAMIC 0.0022MF 30% 25V
C108	1-162-108-00	CERAMIC 680PF 10% 50V
C109	1-136-157-00	FILM 0.022MF 5% 50V
C112	1-124-184-00	ELECT 3.3MF 20% 50V
C113	1-106-188-00	MYLAR 0.0047MF 5% 50V
C114	1-123-306-00	ELECT 47MF 20% 10V
C115	1-123-306-00	ELECT 47MF 20% 10V
C116	1-136-153-00	FILM 0.01MF 5% 50V
C117	1-136-155-00	FILM 0.015MF 5% 50V
C118	1-136-153-00	FILM 0.01MF 5% 50V
C119	1-123-380-00	ELECT 1MF 20% 50V
C120	1-136-166-00	FILM 0.12MF 5% 50V
C121	1-136-166-00	FILM 0.12MF 5% 50V
C122	1-136-170-00	FILM 0.27MF 5% 50V
C123	1-136-168-00	FILM 0.18MF 5% 50V
C124	1-136-163-00	FILM 0.068MF 5% 50V
C125	1-123-380-00	ELECT 1MF 20% 50V
C126	1-136-158-00	FILM 0.027MF 5% 50V
C127	1-136-168-00	FILM 0.18MF 5% 50V
C128	1-136-163-00	FILM 0.068MF 5% 50V
C129	1-123-369-00	ELECT 4.7MF 20% 25V
C130	1-136-169-00	FILM 0.22MF 5% 50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description
C131	1-123-369-00	ELECT 4.7MF 20% 25V
C132	1-124-186-00	ELECT 10MF 20% 50V
C133	1-123-330-00	ELECT 22MF 20% 16V
C134	1-136-154-00	FILM 0.012MF 5% 50V
C136	1-136-155-00	FILM 0.015MF 5% 50V
C137	1-136-160-00	FILM 0.039MF 5% 50V
C138	1-136-160-00	FILM 0.039MF 5% 50V
C139	1-106-192-00	MYLAR 0.0068MF 5% 50V
C140	1-162-105-00	CERAMIC 390PF 10% 50V
C141	1-107-036-00	MICA 68PF 5% 500V
C142	1-107-165-00	MICA 56PF 5% 500V
C143	1-123-369-00	ELECT 4.7MF 20% 25V
C146	1-124-185-00	ELECT 4.7MF 20% 50V
C150	1-161-494-00	CERAMIC 0.022MF 30% 25V
C151	1-123-356-00	ELECT 10MF 20% 25V
C153	1-162-110-00	CERAMIC 0.001MF 10% 50V
C155	1-162-110-00	CERAMIC 0.001MF 10% 50V
C501	 1-161-744-00 CERAMIC 0.01MF 400V	
C503	1-123-308-00	ELECT 220MF 20% 10V
C504	1-123-308-00	ELECT 220MF 20% 10V
C505	1-123-381-00	ELECT 2.2MF 20% 50V
C508	1-123-380-00	ELECT 1MF 20% 50V
C509	1-123-379-00	ELECT 0.47MF 20% 50V
C510	1-123-380-00	ELECT 1MF 20% 50V
C511	1-130-023-00	FILM 0.0027MF 5% 100V
C512	1-130-023-00	FILM 0.0027MF 5% 100V
C513	1-130-285-00	FILM 0.0033MF 5% 100V
C514	1-129-714-00	FILM 0.01MF 10% 630V
C515	1-123-336-00	ELECT 470MF 20% 25V
C516	1-123-336-00	ELECT 470MF 20% 25V
C517	1-123-324-00	ELECT 1000MF 20% 16V
C518	1-123-348-00	ELECT 470MF 20% 35V
C519	1-123-310-00	ELECT 470MF 20% 10V
C520	1-123-306-00	ELECT 47MF 20% 10V
C521	1-123-310-00	ELECT 470MF 20% 10V
C522	1-123-306-00	ELECT 47MF 20% 10V
C523	1-123-299-00	ELECT 1000MF 20% 6.3V
C524	1-123-322-00	ELECT 330MF 20% 16V
C525	1-123-356-00	ELECT 10MF 20% 25V
C526	1-123-369-00	ELECT 4.7MF 20% 25V
C527	1-123-356-00	ELECT 10MF 20% 25V
C528	1-123-380-00	ELECT 1MF 20% 50V
C529	1-123-333-00	ELECT 100MF 20% 16V
C530	1-123-306-00	ELECT 47MF 20% 10V
C531	1-161-494-00	CERAMIC 0.022MF 30% 25V
C532	1-161-494-00	CERAMIC 0.022MF 30% 25V
C535	1-162-113-00	CERAMIC 0.01MF 30% 16V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C550	1-123-380-00	ELECT	1MF	20%	50V
C551	1-123-330-00	ELECT	22MF	20%	16V
C601	1-162-112-00	CERAMIC	0.0047MF	30%	25V
C602	1-162-112-00	CERAMIC	0.0047MF	30%	25V
C603	1-123-299-00	ELECT	1000MF	20%	6.3V
C604	1-123-307-00	ELECT	100MF	20%	10V
C605	1-123-307-00	ELECT	100MF	20%	10V
C608	1-162-025-00	CERAMIC	33PF	5%	50V
C609	1-162-025-00	CERAMIC	33PF	5%	50V
C610	1-136-161-00	FILM	0.047MF	5%	50V
C611	1-136-161-00	FILM	0.047MF	5%	50V
C616	1-136-165-00	FILM	0.1MF	5%	50V
C619	1-161-494-00	CERAMIC	0.022MF	30%	25V
C620	1-161-494-00	CERAMIC	0.022MF	30%	25V
C621	1-161-494-00	CERAMIC	0.022MF	30%	25V
C622	1-161-494-00	CERAMIC	0.022MF	30%	25V
C623	1-161-494-00	CERAMIC	0.022MF	30%	25V
C624	1-161-494-00	CERAMIC	0.022MF	30%	25V
C625	1-161-494-00	CERAMIC	0.022MF	30%	25V
C626	1-161-494-00	CERAMIC	0.022MF	30%	25V
C627	1-161-494-00	CERAMIC	0.022MF	30%	25V
C628	1-161-494-00	CERAMIC	0.022MF	30%	25V
C629	1-161-494-00	CERAMIC	0.022MF	30%	25V
C630	1-161-494-00	CERAMIC	0.022MF	30%	25V
C631	1-161-494-00	CERAMIC	0.022MF	30%	25V
C632	1-161-494-00	CERAMIC	0.022MF	30%	25V
C633	1-162-110-00	CERAMIC	0.001MF	10%	50V
C634	1-162-110-00	CERAMIC	0.001MF	10%	50V
C635	1-123-307-00	ELECT	100MF	20%	10V
C636	1-162-037-00	CERAMIC	100PF	5%	50V
C637	1-123-307-00	ELECT	100MF	20%	10V
C638	1-162-025-00	CERAMIC	33PF	5%	50V
C701 Δ	1-161-741-00	(G-AEP)...CERAMIC	0.001MF	10%	400V
C701 Δ	1-161-741-00	(US).....CERAMIC	0.001MF	10%	400V
C702 Δ	1-161-741-00	(G-AEP)...CERAMIC	0.001MF	10%	400V
C702 Δ	1-161-741-00	(US).....CERAMIC	0.001MF	10%	400V
C703 Δ	1-161-741-00	(G-AEP)...CERAMIC	0.001MF	10%	400V
C704 Δ	1-161-494-00	(G-AEP)...CERAMIC	0.0022MF	30%	25V
C705 Δ	1-161-494-00	(G-AEP)...CERAMIC	0.0022MF	30%	25V
C706 Δ	1-161-494-00	(G-AEP)...CERAMIC	0.0022MF	30%	25V
C801	1-123-332-00	ELECT	47MF	20%	16V
C802	1-123-332-00	ELECT	47MF	20%	16V
C901	1-162-110-00	CERAMIC	0.001MF	10%	50V
C902	1-162-100-00	CERAMIC	150PF	10%	50V
C903	1-162-100-00	CERAMIC	150PF	10%	50V
C904	1-123-369-00	ELECT	4.7MF	20%	50V
C905	1-162-113-00	CERAMIC	0.01MF	30%	16V
CNP501*1-560-605-00	PIN, CONNECTOR	6P			
CNP502*1-560-708-00	PIN, CONNECTOR	2P			
CNP503*1-560-062-00	PIN, CONNECTOR	4P			
CNP601*1-560-063-00	PIN, CONNECTOR	5P			
CNP602*1-560-339-00	PIN, CONNECTOR	9P			
CNP603*1-560-338-00	PIN, CONNECTOR	7P			
CNP604*1-560-060-00	PIN, CONNECTOR	2P			
CNP605*1-560-062-00	PIN, CONNECTOR	4P			
CNP606*1-560-061-00	PIN, CONNECTOR	3P			

The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

ELECTRICAL PARTS

Ref.No.	Part No.	Description
CNP607*1-560-063-00	PIN, CONNECTOR	5P
CNP608*1-560-063-00	PIN, CONNECTOR	5P
CNP609*1-560-060-00	PIN, CONNECTOR	2P
CNP610*1-560-060-00	PIN, CONNECTOR	2P
CT101	1-141-225-00	CAP, TUNING, TRIMMER
CT201	1-141-225-00	CAP, TUNING, TRIMMER
D501	8-719-200-02	DIODE 10E-2
D502	8-719-200-02	DIODE 10E-2
D503	8-719-200-02	DIODE 10E-2
D504	8-719-200-02	DIODE 10E-2
D505	8-719-200-02	DIODE 10E-2
D506	8-719-200-02	DIODE 10E-2
D507	8-719-200-02	DIODE 10E-2
D508	8-719-200-02	DIODE 10E-2
D509	8-719-200-02	DIODE 10E-2
D510	8-719-107-94	DIODE 1SS202-1
D511	8-719-107-94	DIODE 1SS202-1
D513	8-719-107-94	DIODE 1SS202-1
D514	8-719-107-94	DIODE 1SS202-1
D515	8-719-107-94	DIODE 1SS202-1
D516	8-719-107-94	DIODE 1SS202-1
D517	8-719-107-94	DIODE 1SS202-1
D518	8-719-107-94	DIODE 1SS202-1
D519	8-719-107-94	DIODE 1SS202-1
D520	8-719-200-02	DIODE 10E-2
D521	8-719-200-02	DIODE 10E-2
D522	8-719-107-94	DIODE 1SS202-1
D524	8-719-910-15	DIODE HZ11B2L
D602	8-719-107-94	DIODE 1SS202-1
D603	8-719-107-94	DIODE 1SS202-1
D606	8-719-107-94	DIODE 1SS202-1
D607	8-719-107-94	DIODE 1SS202-1
D612	8-719-107-94	DIODE 1SS202-1
D613	8-719-107-94	DIODE 1SS202-1
D614	8-719-107-94	DIODE 1SS202-1
D615	8-719-107-94	DIODE 1SS202-1
D616	8-719-107-94	DIODE 1SS202-1
D617	8-719-200-02	DIODE 10E-2
D618	8-719-910-92	DIODE HZ9A2L
D620	8-719-107-94	DIODE 1SS202-1
D702	8-719-907-86	DIODE BG5638S
D703	8-719-907-86	DIODE BG5638S
D704	8-719-907-87	DIODE PR5638S
D705	8-719-907-85	DIODE AA5638S
D706	8-719-905-31	DIODE PY5531K
D707	8-719-905-31	DIODE PY5531K
D801	8-719-107-94	DIODE 1SS202-1
D902	8-719-107-94	DIODE 1SS202-1
D903	8-719-107-94	DIODE 1SS202-1
D904	8-719-107-94	DIODE 1SS202-1
D905	8-719-107-94	DIODE 1SS202-1
D906	8-719-107-94	DIODE 1SS202-1
D907	8-719-107-94	DIODE 1SS202-1
F501 Δ	1-532-259-00	(AEP,G-AEP)...FUSE, TIME-LAG, 1.6A
F501 Δ	1-532-555-00	(US)...FUSE, GLASS TUBE, 1.6A NORMAL
F502 Δ	1-532-259-00	(AEP,G-AEP)...FUSE, TIME-LAG, 1.6A
F502 Δ	1-532-555-00	(US)...FUSE, GLASS TUBE, 1.6A NORMAL

ELECTRICAL PARTS


Ref.No.	Part No.	Description
HE501	X-3319-616-1	HEAD UNIT ASSY
HRP501	X-3319-616-1	HEAD UNIT ASSY
IC101	8-752-002-70	IC CX20027
IC201	8-752-002-80	IC CX20028
IC501	8-759-101-56	IC CX10033A
IC502	8-759-101-55	IC CX10032A
IC503	8-759-600-02	IC M5218L
IC504	8-759-700-47	IC CX10035
IC601	8-755-640-72	IC CX564-072
IC602	8-759-600-54	IC M50783SP
IC603	8-759-700-46	IC CX10034
IC604	8-759-984-69	IC MB84069UB
IC901	8-759-602-47	IC M50761-417P
J501	1-507-797-21	JACK, LARGE TYPE (MIC)
J502	1-507-908-11	JACK, PIN 4P (LINE IN/LINE OUT)
J503	1-507-796-21	JACK (HEADPHONES)
L101	1-408-922-00	MICRO INDUCTOR 6.8MMH
L102	1-408-920-00	MICRO INDUCTOR 4.7MMH
L103	1-408-924-00	MICRO INDUCTOR 10MMH
L104	1-408-930-00	MICRO INDUCTOR 33MMH
L201	1-408-922-00	MICRO INDUCTOR 6.8MMH
L202	1-408-920-00	MICRO INDUCTOR 4.7MMH
L203	1-408-924-00	MICRO INDUCTOR 10MMH
L204	1-408-930-00	MICRO INDUCTOR 33MMH
L501	1-407-177-XX	MICRO INDUCTOR 470UH
L502	1-407-169-XX	MICRO INDUCTOR 100UH
LPF101	1-231-388-00	FILTER, LOW PASS
LPF201	1-231-388-00	FILTER, LOW PASS
M802	1-541-239-00	MOTOR (CAPSTAN)
PL803	1-518-561-11	LAMP, PILOT
PL802	1-518-562-11	LAMP, PILOT
PL801	1-518-563-11	LAMP, PILOT
PM1	1-454-316-00	SOLENOID, PLUNGER (HEAD)
PM2	1-454-316-00	SOLENOID, PLUNGER (BRAKE)
PM3	1-454-374-11	SOLENOID, PLUNGER (DIRECTION)
Q101	8-729-606-33	TRANSISTOR 2SC2603F
Q102	8-729-606-33	TRANSISTOR 2SC2603F
Q103	8-729-606-33	TRANSISTOR 2SC2603F
Q104	8-729-100-13	TRANSISTOR 2SC2001
Q105	8-729-606-33	TRANSISTOR 2SC2603F
Q106	8-729-606-33	TRANSISTOR 2SC2603F
Q107	8-729-606-33	TRANSISTOR 2SC2603F
Q201	8-729-606-33	TRANSISTOR 2SC2603F
Q202	8-729-606-33	TRANSISTOR 2SC2603F
Q203	8-729-606-33	TRANSISTOR 2SC2603F
Q204	8-729-100-13	TRANSISTOR 2SC2001
Q205	8-729-606-33	TRANSISTOR 2SC2603F
Q206	8-729-606-33	TRANSISTOR 2SC2603F
Q207	8-729-606-33	TRANSISTOR 2SC2603F
Q501	8-729-180-92	TRANSISTOR 2SD809-K
Q502	8-729-173-13	TRANSISTOR 2SB731
Q503	8-729-201-78	TRANSISTOR 2SD1406
Q504	8-729-201-78	TRANSISTOR 2SD1406
Q505	8-729-606-33	TRANSISTOR 2SC2603F

ELECTRICAL PARTS



Ref.No.	Part No.	Description
Q506	8-729-900-61	TRANSISTOR DTA114ES
Q507	8-729-900-61	TRANSISTOR DTA114ES
Q508	8-729-606-33	TRANSISTOR 2SC2603F
Q509	8-729-600-27	TRANSISTOR 2SC634SP
Q510	8-729-600-27	TRANSISTOR 2SC634SP
Q511	8-729-900-74	TRANSISTOR DTC143TS
Q512	8-729-900-36	TRANSISTOR DTC124ES
Q513	8-729-900-63	TRANSISTOR DTA124ES
Q601	8-729-102-03	TRANSISTOR 2SD1020
Q602	8-729-177-43	TRANSISTOR 2SD774-5
Q603	8-729-800-83	TRANSISTOR 2SB808
Q604	8-729-800-83	TRANSISTOR 2SB808
Q605	8-729-177-43	TRANSISTOR 2SD774
Q606	8-729-177-43	TRANSISTOR 2SD774
Q607	8-729-606-33	TRANSISTOR 2SC2603F
Q608	8-729-606-33	TRANSISTOR 2SC2603F
Q611	8-729-900-63	TRANSISTOR DTA124ES
Q612	8-729-900-63	TRANSISTOR DTA124ES
Q613	8-729-900-63	TRANSISTOR DTA124ES
Q614	8-729-900-63	TRANSISTOR DTA124ES
Q615	8-729-900-63	TRANSISTOR DTA124ES
Q616	8-729-900-61	TRANSISTOR DTA114ES
Q617	8-729-900-61	TRANSISTOR DTA114ES
Q618	8-729-900-74	TRANSISTOR DTC143TS
Q619	8-729-900-63	TRANSISTOR DTA124ES
Q620	8-729-900-63	TRANSISTOR DTA124ES
Q621	8-729-900-74	TRANSISTOR DTC143TS
Q622	8-729-900-61	TRANSISTOR DTA114ES
Q623	8-729-100-13	TRANSISTOR 2SC2001
Q624	8-729-900-36	TRANSISTOR DTC124ES
Q625	8-729-900-74	TRANSISTOR DTC143TS
Q626	8-729-900-61	TRANSISTOR DTA114ES
Q627	8-729-900-61	TRANSISTOR DTA114ES
Q628	8-729-900-61	TRANSISTOR DTA114ES
Q629	8-729-900-61	TRANSISTOR DTA114ES
Q801	8-729-110-21	TRANSISTOR PH102
Q802	8-729-110-21	TRANSISTOR PH102
Q901	8-729-900-61	TRANSISTOR DTA114ES
Q902	8-729-900-36	TRANSISTOR DTC124ES
Q903	8-729-606-33	TRANSISTOR 2SC2603F
Q904	8-729-900-61	TRANSISTOR DTA114ES
Q905	8-729-900-36	TRANSISTOR DTC124ES
R101	1-247-167-00	CARBON 33K 5% 1/4W
R102	1-247-248-00	CARBON 2.2K 5% 1/2W
R104	1-247-155-00	CARBON 10K 5% 1/4W
R105	1-247-119-00	CARBON 330 5% 1/4W
R106	1-247-166-00	CARBON 30K 5% 1/4W
R107	1-247-179-00	CARBON 100K 5% 1/4W
R110	1-247-143-00	CARBON 3.3K 5% 1/4W
R111	1-247-179-00	CARBON 100K 5% 1/4W
R112	1-247-151-00	CARBON 6.8K 5% 1/4W
R113	1-247-855-00	CARBON 10K 5% 1/6W
R114	1-247-131-00	CARBON 1K 5% 1/4W
R115	1-247-248-00	CARBON 2.2K 5% 1/2W
R116	1-247-164-00	CARBON 24K 5% 1/4W
R117	1-247-107-00	CARBON 100 5% 1/4W
R118	1-247-148-00	CARBON 5.1K 5% 1/4W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R119	1-246-524-00	CARBON	130K	5%	1/4W
R122	1-246-529-00	CARBON	220K	5%	1/4W
R123	1-247-161-00	CARBON	18K	5%	1/4W
R124	1-249-459-11	CARBON	12K	5%	1/4W
R125	1-247-847-00	CARBON	4.7K	5%	1/6W
R126	1-247-130-00	CARBON	910	5%	1/4W
R127	1-247-165-00	CARBON	27K	5%	1/4W
R128	1-247-142-00	CARBON	3K	5%	1/4W
R129	1-247-148-00	CARBON	5.1K	5%	1/4W
R130	1-246-537-00	CARBON	470K	5%	1/4W
R131	1-247-124-00	CARBON	510	5%	1/4W
R132	1-214-776-00	METAL	91K	1%	1/4W
R133	1-247-171-00	CARBON	47K	5%	1/4W
R134	1-247-138-00	CARBON	2K	5%	1/4W
R135	1-247-148-00	CARBON	5.1K	5%	1/4W
R136	1-247-132-00	CARBON	1.1K	5%	1/4W
R137	1-247-888-00	CARBON	240K	5%	1/6W
R138	1-247-887-00	CARBON	220K	5%	1/6W
R139	1-247-886-00	CARBON	200K	5%	1/6W
R140	1-247-845-00	CARBON	3.9K	5%	1/6W
R141	1-247-887-00	CARBON	220K	5%	1/6W
R142	1-247-886-00	CARBON	200K	5%	1/6W
R143	1-247-155-00	CARBON	10K	5%	1/4W
R144	1-247-163-00	CARBON	22K	5%	1/4W
R145	1-247-155-00	CARBON	10K	5%	1/4W
R146	1-247-148-00	CARBON	5.1K	5%	1/4W
R147	1-247-155-00	CARBON	10K	5%	1/4W
R148	1-247-179-00	CARBON	100K	5%	1/4W
R149	1-249-421-11	CARBON	2.2K	5%	1/6W
R150	1-249-459-11	CARBON	12K	5%	1/4W
R151	1-247-836-00	CARBON	1.6K	5%	1/6W
R152	1-247-807-00	CARBON	100	5%	1/6W
R154	1-247-848-00	CARBON	5.1K	5%	1/6W
R155	1-247-855-00	CARBON	10K	5%	1/6W
R156	1-247-843-00	CARBON	3.3K	5%	1/6W
R157	1-247-844-00	CARBON	3.6K	5%	1/6W
R158	1-247-855-00	CARBON	10K	5%	1/6W
R159	1-247-840-00	CARBON	2.4K	5%	1/6W
R160	1-247-853-00	CARBON	8.2K	5%	1/6W
R161	1-247-855-00	CARBON	10K	5%	1/6W
R162	1-247-863-00	CARBON	22K	5%	1/6W
R163	1-249-421-11	CARBON	2.2K	5%	1/6W
R164	1-247-855-00	CARBON	10K	5%	1/6W
R165	1-247-857-00	CARBON	12K	5%	1/6W
R166	1-247-853-00	CARBON	8.2K	5%	1/6W
R167	1-247-115-00	CARBON	220	5%	1/4W
R168	1-247-871-00	CARBON	47K	5%	1/6W
R169	1-247-867-00	CARBON	33K	5%	1/6W
R172	1-247-155-00	CARBON	10K	5%	1/4W
R173	1-247-845-00	CARBON	3.9K	5%	1/6W
R174	1-247-820-00	CARBON	360	5%	1/6W
R175	1-247-813-00	CARBON	180	5%	1/6W
R501	1-247-155-00	CARBON	10K	5%	1/4W
R502	1-247-137-00	CARBON	1.8K	5%	1/4W
R503	1-247-158-00	CARBON	13K	5%	1/4W
R504	1-247-138-00	CARBON	2K	5%	1/4W

The components identified by shading and mark  are critical for safety. Replace only with part number specified.

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R505	1-247-150-00	CARBON	6.2K	5%	1/4W
R506	1-247-136-00	CARBON	1.6K	5%	1/4W
R507	1-247-162-00	CARBON	20K	5%	1/4W
R508	1-247-717-11	CARBON	2.2K	5%	1/4W
R509	1-247-240-00	CARBON	1K	5%	1/2W
R510	1-247-863-00	CARBON	22K	5%	1/6W
R512	1-247-821-00	CARBON	390	5%	1/6W
R513	1-247-821-00	CARBON	390	5%	1/6W
R514	1-247-821-00	CARBON	390	5%	1/6W
R515	1-247-855-00	CARBON	10K	5%	1/6W
R516	1-247-855-00	CARBON	10K	5%	1/6W
R517	1-247-846-00	CARBON	4.3K	5%	1/6W
R518	1-247-838-00	CARBON	2K	5%	1/6W
R520	1-247-847-00	CARBON	4.7K	5%	1/6W
R521	1-247-865-00	CARBON	27K	5%	1/6W
R522	1-247-865-00	CARBON	27K	5%	1/6W
R523	1-247-081-00	CARBON	6.8	5%	1/4W
R524	1-249-421-11	CARBON	2.2K	5%	1/6W
R525	1-247-859-00	CARBON	15K	5%	1/6W
R526	1-247-813-00	CARBON	180	5%	1/6W
R527	1-247-821-00	CARBON	390	5%	1/6W
R528	1-247-879-00	CARBON	100K	5%	1/6W
R529	1-247-849-00	CARBON	5.6K	5%	1/6W
R530	1-247-863-00	CARBON	22K	5%	1/6W
R531	1-247-831-00	CARBON	1K	5%	1/6W
R532	1-247-871-00	CARBON	47K	5%	1/6W
R533	1-247-871-00	CARBON	47K	5%	1/6W
R534	1-247-224-00	CARBON	220	5%	1/2W
R535	1-247-224-00	CARBON	220	5%	1/2W
R536	1-249-421-11	CARBON	2.2K	5%	1/6W
R539	1-247-838-00	CARBON	2K	5%	1/6W
R541	1-247-843-00	CARBON	3.3K	5%	1/6W
R550 	1-217-383-00	FUSIBLE	4.7	5%	1/4W F
R551 	1-217-383-00	FUSIBLE	4.7	5%	1/4W F
R552	1-247-855-00	CARBON	10K	5%	1/6W
R553	1-247-863-00	CARBON	22K	5%	1/6W
R555	1-247-863-00	CARBON	22K	5%	1/6W
R556	1-247-863-00	CARBON	22K	5%	1/6W
R557	1-247-863-00	CARBON	22K	5%	1/6W
R558	1-247-825-00	CARBON	560	5%	1/6W
R559	1-247-845-00	CARBON	3.9K	5%	1/6W
R601	1-247-889-00	CARBON	270K	5%	1/6W
R602	1-247-889-00	CARBON	270K	5%	1/6W
R603	1-247-874-00	CARBON	62K	5%	1/6W
R604	1-247-874-00	CARBON	62K	5%	1/6W
R605	1-247-847-00	CARBON	4.7K	5%	1/6W
R606	1-247-847-00	CARBON	4.7K	5%	1/6W
R607	1-247-863-00	CARBON	22K	5%	1/6W
R608	1-247-828-00	CARBON	750	5%	1/6W
R609	1-247-833-00	CARBON	1.2K	5%	1/6W
R610	1-247-821-00	CARBON	390	5%	1/6W
R611	1-247-831-00	CARBON	1K	5%	1/6W
R612	1-247-855-00	CARBON	10K	5%	1/6W
R613	1-247-831-00	CARBON	1K	5%	1/6W
R614	1-247-831-00	CARBON	1K	5%	1/6W
R615	1-247-831-00	CARBON	1K	5%	1/6W
R616	1-247-855-00	CARBON	10K	5%	1/6W
R617	1-247-855-00	CARBON	10K	5%	1/6W
R618	1-247-855-00	CARBON	10K	5%	1/6W

ELECTRICAL PARTS


Ref.No.	Part No.	Description			
R620	1-247-807-00	CARBON	100	5%	1/6W
R621	1-247-807-00	CARBON	100	5%	1/6W
R622	1-247-123-00	CARBON	470	5%	1/4W
R623	1-247-820-00	CARBON	360	5%	1/6W
R624	1-247-807-00	CARBON	100	5%	1/6W
R625	1-247-807-00	CARBON	100	5%	1/6W
R626	1-247-867-00	CARBON	33K	5%	1/6W
R627	1-247-867-00	CARBON	33K	5%	1/6W
R628	1-247-867-00	CARBON	33K	5%	1/6W
R629	1-247-867-00	CARBON	33K	5%	1/6W
R630	1-247-847-00	CARBON	4.7K	5%	1/6W
R631	1-247-867-00	CARBON	33K	5%	1/6W
R632	1-247-869-00	CARBON	39K	5%	1/6W
R633	1-247-855-00	CARBON	10K	5%	1/6W
R634	1-247-847-00	CARBON	4.7K	5%	1/6W
R635	1-247-863-00	CARBON	22K	5%	1/6W
R638	1-247-815-00	CARBON	220	5%	1/6W
R639	1-247-815-00	CARBON	220	5%	1/6W
R640	1-247-815-00	CARBON	220	5%	1/6W
R641	1-247-815-00	CARBON	220	5%	1/6W
R642	1-247-815-00	CARBON	220	5%	1/6W
R643	1-247-815-00	CARBON	220	5%	1/6W
R644	1-247-815-00	CARBON	220	5%	1/6W
R645	1-247-815-00	CARBON	220	5%	1/6W
R646	1-247-815-00	CARBON	220	5%	1/6W
R647	1-247-815-00	CARBON	220	5%	1/6W
R648	1-247-815-00	CARBON	220	5%	1/6W
R649	1-247-815-00	CARBON	220	5%	1/6W
R650	1-247-815-00	CARBON	220	5%	1/6W
R651	1-247-815-00	CARBON	220	5%	1/6W
R654	1-247-863-00	CARBON	22K	5%	1/6W
R655	1-247-863-00	CARBON	22K	5%	1/6W
R656	1-247-863-00	CARBON	22K	5%	1/6W
R657	1-247-863-00	CARBON	22K	5%	1/6W
R658	1-247-863-00	CARBON	22K	5%	1/6W
R659	1-247-863-00	CARBON	22K	5%	1/6W
R660	1-247-871-00	CARBON	47K	5%	1/6W
R661	1-247-863-00	CARBON	22K	5%	1/6W
R662	1-247-863-00	CARBON	22K	5%	1/6W
R663	1-247-863-00	CARBON	22K	5%	1/6W
R664	1-247-863-00	CARBON	22K	5%	1/6W
R665	1-247-863-00	CARBON	22K	5%	1/6W
R666	1-247-863-00	CARBON	22K	5%	1/6W
R667	1-247-863-00	CARBON	22K	5%	1/6W
R668	1-247-859-00	CARBON	15K	5%	1/6W
R669	1-247-857-00	CARBON	12K	5%	1/6W
R670	1-247-857-00	CARBON	12K	5%	1/6W
R901	1-247-107-00	CARBON	100	5%	1/4W
R902	1-247-861-00	CARBON	18K	5%	1/6W
R903	1-247-857-00	CARBON	12K	5%	1/6W
R904	1-247-783-00	CARBON	10	5%	1/6W
R905	1-247-863-00	CARBON	22K	5%	1/6W
R906	1-247-863-00	CARBON	22K	5%	1/6W
R907	1-247-903-00	CARBON	1M	5%	1/6W
R908	1-247-841-00	CARBON	2.7K	5%	1/6W
R910	1-247-863-00	CARBON	22K	5%	1/6W
R911	1-247-863-00	CARBON	22K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description
RV101	1-226-236-00	RES, ADJ, CARBON 10K
RV102	1-228-724-00	RES, ADJ, CARBON 10K
RV104	1-226-236-00	RES, ADJ, CARBON 10K
RV201	1-226-236-00	RES, ADJ, CARBON 10K
RV202	1-228-724-00	RES, ADJ, CARBON 10K
RV204	1-226-236-00	RES, ADJ, CARBON 10K
RV501	1-226-991-00	RES, VAR, SLIDE 20K/20K (REC LEVEL)
RY501	1-515-535-11	RELAY
S501	1-554-773-11	SWITCH, PUSH (REVERSE MODE/PRE-END REVERSE/DOLBY NR)
S502	1-554-208-00	SWITCH, SLIDE (TIMER)
S503	1-553-318-00	SWITCH, PUSH (AC POWER) (1 KEY)
S610	1-554-410-00	SWITCH, LEAF (POWER)
S701	1-554-303-00	SWITCH, KEY BOARD (STOP)
S702	1-554-303-00	SWITCH, KEY BOARD (REW)
S703	1-554-303-00	SWITCH, KEY BOARD (FF)
S705	1-554-303-00	SWITCH, KEY BOARD (FWD)
S706	1-554-303-00	SWITCH, KEY BOARD (REV)
S707	1-554-303-00	SWITCH, KEY BOARD (REC)
S708	1-554-303-00	SWITCH, KEY BOARD (PAUSE)
S709	1-554-303-00	SWITCH, KEY BOARD (REC MUTE)
S710	1-554-303-00	SWITCH, KEY BOARD (AMS SCAN)
S711	1-554-303-00	SWITCH, KEY BOARD (AMS BLANK)
S712	1-554-303-00	SWITCH, KEY BOARD (RESET)
S713	1-554-303-00	SWITCH, KEY BOARD (MEMORY)
S801	1-553-856-00	SWITCH, KEY BOARD (HALF DET)
S802	1-553-856-00	SWITCH, KEY BOARD (ERASE PROOF (A))
S803	1-553-856-00	SWITCH, KEY BOARD (TAPE SELECT/120U)
S804	1-553-856-00	SWITCH, KEY BOARD (TAPE SELECT/METAL)
S805	1-553-856-00	SWITCH, KEY BOARD (ERASE PROOF (B))
S806	1-554-883-11	SWITCH, SLIDE (DIRECTION)
SPK101	1-235-186-00	ENCAPSULATED COMPONENT
SPK201	1-235-186-00	ENCAPSULATED COMPONENT
T501	1-447-779-11	(US).....TRANSFORMER, POWER
T501	1-447-781-11	(AEP,G-AEP).....TRANSFORMER, POWER
T502	1-433-283-11	TRANSFORMER, BIAS OSCILLATION
X601	1-567-160-00	OSCILLATOR, CERAMIC
X901	1-527-532-00	OSCILLATOR, CERAMIC

ACCESSORY & PACKING MATERIAL

Part No.	Description
1-551-734-11	CORD, CONNECTION (RK-74A)
1-556-372-41	CORD, CONNECTION (4 CORE)
3-315-149-00	CUSHION (LEFT), LOWER
3-315-150-00	CUSHION (RIGHT), LOWER
3-315-151-00	CUSHION (LEFT), UPPER
3-315-152-00	CUSHION (RIGHT), UPPER
3-322-821-21	INDIVIDUAL CARTON
3-701-630-00	BAG, POLYETHYLENE
3-703-865-01	(AEP)...LABEL, COLOR
3-703-876-01	(AEP)...LABEL, COLOR
3-760-576-11	(AEP,G-AEP)...MANUAL, INSTRUCTION
3-760-576-21	(US).....MANUAL, INSTRUCTION
4-876-352-00	SHEET, PROTECTION

The components identified by shading and mark  are critical for safety. Replace only with part number specified.